Geology and Ground-Water Resources of the Baton Rouge Area Louisiana

By R. R. MEYER *and* A. N. TURCAN, Jr.

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1296

Prepared in cooperation with the Louisiana Department of Public Works and the Louisiana Department of Conservation, Louisiana Geological Survey

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1955

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, *Secretary*

GEOLOGICAL SURVEY

W. E. Wrather, *Director*

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price $1 (paper cover)

CONTENTS

ILLUSTRATIONS

[All plates are in pocket]

TABLES

GEOLOGY AND GROUND-WATER RESOURCES OF THE BATON ROUGE AREA, LOUISIANA

By R. R. Meyer and A. N. Turcan, Jr.

ABSTRACT

Large quantities of fresh ground water are available for use in the Baton Rouge area from sands of Recent, Pleistocene, and Miocene ages. Pumping from wells screened in the "400-foot," "600-foot," and "2,000-foot" sands constitutes about 70 percent of the total daily ground-water withdrawals of 66 million gallons. Other fresh-water sands, such as the "1,200-foot," "1,500-foot," and the upper part of the "2,800-foot" sands, occurring to a maximum depth of about 2,800 feet, offer a large potential source of ground water for future developments and are now only partially developed. Deposits of Recent age occurring at shallow depths adjacent to the Mississippi River will yield to wells large quantities of hard water having a relatively low temperature.

With the exception of water from the Recent deposits, the chemical quality of ground water in the Baton Rouge area is generally such that it can be used without treatment for most purposes; however, analyses of waters from wells just south of the industrial district screened in the "600-foot" sand indicate there is contamination by salt-water migration within this aquifer. The exact location of the fresh water-salt water interface and its rate of movement have not been ascertained.

Discharge of ground water from the area is by pumping and by natural means. Pumping, which began at the turn of the century, constitutes nearly 100 percent of the present (1953) total discharge. Records of pumpage for the period 1941-52 were obtained largely from well owners and are estimates based upon the yield of wells and the period of operation. The daily withdrawals have increased from about 10 million gallons in 1936 to the present rate of about 65 million gallons. The average yield per well, based on the records for 21 out of 80 principal industrial wells, is 750 gpm. Since 1936 natural discharge in the industrial district has been only in the form of upward seepage or migration—a relatively small amount in comparison to the total ground-water use. The effect of pumpage has been primarily a lowering of water levels, which proceeded at a gradual rate until 1936. Since that year the rate of decline of water levels has been accelerated, along with the rate of pumping. The upper part of the "400-foot" sand is gradually being dewatered, so that water-table conditions are replacing artesian conditions in a progressively larger area in that aquifer. Accompanying the dewatering is a reduction in the specific capacities of some wells.

Some of the deeper sands were not tapped until recent years, and consequently the withdrawal from them and the serious decline in water levels have not been as great as in the "400-foot" sand. The "2,800-foot" sand, which is the deepest and most recently developed fresh-water sand in the area, has a hydrostatic head of about 75 feet above the land surface.

In order to provide for industrial and municipal development and expansion, consideration should be given to the possibility of developing water from sands of Recent age and from those less heavily developed sands of Pleistocene and Miocene ages below the "400-" and "600-foot" aquifers. Some of the deeper sands are more than 200 feet thick

and capable of yielding to wells large quantities of water having temperatures ranging from 78° to 96° F. When new or replacement wells are installed proper spacing between wells is needed in order to prevent excessive mutual interference.

The coefficients of transmissibility and storage determined from pumping tests on wells in seven different sands in the area range from 24,000 to 289,000 gpd per foot and 0.01 to 0.0003, respectively. These values are used to estimate the theoretical future water-level declines caused by pumping. Tests were not made on the "2,400-" and "2,800-foot" sands, but of the sands not yet developed to a great extent (1953), the Recent deposits and the "1,200-" and "2,000-foot" sands, of Pleistocene and Miocene age, respectively, probably offer the greatest potential supply.

INTRODUCTION

LOCATION AND GENERAL FEATURES OF THE AREA

The Baton Rouge area, as the term is used in this report, is in the southeastern part of Louisiana (see fig. 1) and includes essentially all of East Baton Rouge Parish, the eastern part of West Baton Rouge Parish, and the extreme southern part of East Feliciana Parish. It lies approximately between north latitudes

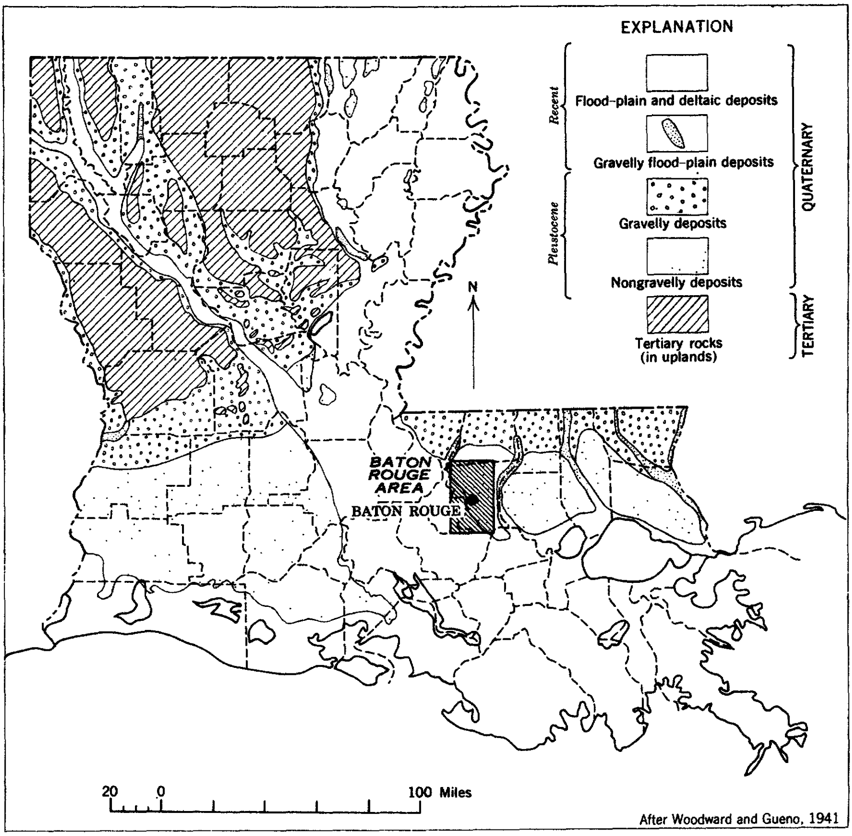

Figure 1. —Generalized map of Louisiana showing regions of gravel exposures and location of project area.

30°15' and 30°45', and between west longitudes 91°00' and 91°15'. It contains about 390 square miles and has an east-west length of 15 miles and a north-south length of 26 miles. The principal center of population in this area is the city of Baton Rouge, which is a deep-water port 240 miles inland from the Gulf of Mexico, lying along 11 miles of the first high land north of the Gulf of Mexico on the eastern bank of the Mississippi River. It is 81 land miles northwest of New Orleans and 237 miles southeast of Shreveport. Baton Rouge is the major petroleum-refining center of the State of Louisiana. It has also a large concentration of chemical plants and about 200 other industries. In this report the Baton Rouge industrial district is considered to be the area adjacent to the Mississippi River in the northern part of the city of Baton Rouge where there is a concentration of industrial plants. Thus, the district is a part of the Baton Rouge area described above.

Located at Baton Rouge are the capitol of the State of Louisiana and Louisiana State University. The population of East Baton Rouge Parish has increased from 88,415 in 1940 to 158,236 in 1950, which represents an increase during the past decade of about 80 percent. The area is serviced by the Illinois Central, Kansas City Southern, and Missouri Pacific railroad companies. Eastern and Delta-C. & S. airlines provide air-freight and passenger service.

PURPOSE AND SCOPE OF INVESTIGATION

In the Baton Rouge area wells constitute the principal source of water for many industrial and all domestic and public-supply uses. The larger industries generally have developed their own water supplies from wells, only the smaller industries obtaining water from the public-supply systems. Several industries obtain additional water from the Mississippi River. River water is used for processing and cooling, particularly during the months when the river-water temperature is the lowest. However, ground water is the principal source of good quality water of relatively constant temperature that is used for cooling, processing, and boiler feed.

By far the greatest demand for ground water in the area is that for industrial purposes. In the area approximately 80 industrial wells supply about 56 million gallons of water daily. Based upon the records of 21 industrial wells, the average yield from large-capacity wells in the Baton Rouge industrial district is 750 gpm per well.

It is difficult to determine the dollar value of this ground water as it is used for many different purposes; however, assuming that this source of water as developed by the industries was depleted and had to be replaced by another source at the relatively low industrial rate of 8 cents per thousand gallons, the annual cost would be about $1,600,000.

There has been a growing concern over the adequacy of the ground-water resources in the Baton Rouge area to supply possible increased demands caused by industrial expansion, or even existing demands. The results of the most recent investigation describing the ground-water resources of the Baton Rouge area are given in Cushing and Jones, 1945. Since that time a limited program has been carried on for the collection of pumpage, water-level, and well-construction records. The purpose of the investigation described in this report was to compile information collected since 1945, to make a detailed survey of the hydrologic characteristics of the principal aquifers, and to present an analysis of these data to aid in planning the development of this valuable natural resource. This investigation was made in cooperation with the Louisiana Department of Public Works and the Department of Conservation, Louisiana Geological Survey.

During the investigation, pumping tests were made on wells screened in most of the principal aquifers in the industrial district. Results of the tests made prior to the present investigation by both government agencies and private concerns were also analyzed. As shown in table 4, a total of 31 determinations of hydraulic characteristics of aquifers were made using data from various wells within the industrial district. It was not possible to make a sufficient number of tests in some sands to determine the areal differences in hydraulic characteristics. Consequently, in the future, it would be advisable to make such tests wherever possible in the industrial area as new wells are installed or existing wells modified so measurements of yield and water levels may be made.

The areal extent of the principal sands in the Baton Rouge area was determined by means of a study of drillers' logs, electric logs, and hydrologic data. The recharge areas of the deeper aquifers were not determined, as the sands crop out north of the area studied. Ground-water studies in the parishes north of East Baton Rouge Parish and in the border counties in the State of Mississippi will be necessary to correlate the principal aquifers in the Baton Rouge area with their areas of recharge.

All available well records in the Baton Rouge area are compiled in table 5. Locations of these wells are shown on plate 3 and figures 13 and 21. In order to facilitate future planning, wells screened in the principal aquifers are shown on two different maps (see figs. 13 and 21) and the sands screened are shown by different symbols. Not all the wells shown on these maps are currently in use; consequently, it will be necessary to refer to the table of well records in order to locate the producing well nearest to any well site being considered.

Movement of ground water in the periphery of the area is relatively slow and, consequently, encroachment of salt water from a source outside the area would require many years before contamination in the industrial district would occur. During the investigation, water samples from some wells south of the industrial district were analyzed for chloride content to determine the presence of salt water. The data indicate that some sands that yield fresh water in the industrial district contain salt water in the part of the area to the south, but the exact location of the salt water-fresh water interface cannot yet be determined. It is most important to continue and expand the program of observations established during this investigation to determine the extent and movement of salt water.

The amount of water pumped for industrial purposes from the Baton Rouge area was determined from reports submitted by each principal consumer. The effects of these withdrawals have been measured in several observation wells in the industrial district and its vicinity. During the investigation additional observation wells were established and it is planned to continue collecting records on selected wells to determine future changes in artesian pressures.

PREVIOUS INVESTIGATIONS

Several reports have been published that discuss the geology of southern Louisiana, of which the Baton Rouge area is a part. As these reports include a large area their discussion of the geology of the industrial district is not detailed. Only two reports have been published that describe the occurrence of ground water in the Baton Rouge area. G. D. Harris in 1905 (p. 1–77) described the geology and occurrence of ground water in southern Louisiana. On pages 45 and 46 of this report he presents observations on the depths of wells, quality of water, flow of wells, and artesian pressures in East Baton Rouge Parish.

From 1905 to 1945 no reports describing ground-water developments in the Baton Rouge area were published. A progress report written by E. M. Cushing and P. H. Jones was published by the Louisiana Department of Public Works in 1945. This report, "Ground water conditions in the vicinity of Baton Rouge," discusses the geology and ground-water hydrology of the area. Much of the data presented by Cushing and Jones were used during the present investigation, and their report aided materially in the understanding of the geology and occurrence of ground water in the area.

ACKNOWLEDGMENTS

The writers are grateful for the excellent cooperation and assistance received from many persons, industries, and other agencies, State and Federal, in the Baton Rouge area. Information on well construction and pumpage was supplied by the Esso Standard Oil Co., Ethyl Corp., Copolymer Corp., Kaiser Aluminum and Chemical Corp., Gulf States Utilities Co., Naugatuck Chemical, Ideal Cement Co., and the Solvay Process Division and General Chemical Division of the Allied Chemical and Dye Corp. Officials of these companies also were helpful in many ways in making pumping tests possible. Drillers' logs, electric logs, well-construction data, and formation samples were made available by W. M. Eberhart of Baton Rouge, D. K. Summers of Denham Springs, and Layne-Louisiana Co. of Lake Charles, La. The information provided by these well contractors was invaluable in the preparation of this report. Stone and Webster Engineering Corp. also provided electric logs, well-construction data, and formation samples for wells constructed at the Gulf States Utilities Co. plant. Information on the subsurface geology of the area was obtained from numerous electric logs of oil-test wells supplied by Leo W. Hough, state geologist, Louisiana Department of Conservation. Climatological data were obtained from the Louisiana Department of Public Works through C. K. Oakes, chief, Hydraulic Section. Leo Bankston and C. K. Eldridge furnished records of wells owned by the Baton Rouge Water Works Co. and also were helpful in making wells available for water-level measurements.

WELL-NUMBERING SYSTEM

Throughout this and other reports on ground-water resources in Louisiana the wells are listed with reference to the parish in which they are situated and in the numerical order in which they are inventoried. For example, well EB-1, on the Esso Standard Oil Co. property in Baton Rouge, was the first well inventoried by the United States Geological Survey in East Baton Rouge Parish. The record of each well is on file and its location is plotted and numbered on a map. It has been our purpose to describe the location of all wells to within the nearest sixteenth section in the township and range in which it is located, but in the metropolitan area of Baton Rouge where congested conditions exist it is necessary to locate wells with reference to city streets.

LAND FORMS AND DRAINAGE

The Baton Rouge area is in the Gulf Coastal Plain (Fenneman, 1938) and is divided roughly by the Mississippi River into two sections of the Coastal Plain province—the Mississippi Alluvial

Plain to the west and the East Gulf Coastal Plain to the east (Fenneman, 1938, pp. 65–87).

In the area under consideration, the Mississippi Alluvial Plain has a relief of approximately 20 feet measured from the crest of the natural levee to the lowest back-swamp surface which has an altitude of about 10 feet. (See Fisk, Richards, Brown, and Steere, 1938, p. 5.) The East Gulf Coastal Plain to the east of the Mississippi River is a moderately dissected area of low relief. In the Baton Rouge area the altitude of the plain ranges from about 120 feet above mean sea level in the northern part of the area to about 30 feet in the southern part and averages about 60 feet above sea level. The local relief does not exceed 40 feet, except in the area adjacent to the escarpment bordering the Mississippi River where it is as much as 50 feet, and the plain slopes gently southeast at a rate of about 3 feet to the mile.

With the exception of the part immediately adjacent to the Mississippi River, all the streams east of the Mississippi River flow southeast into either the Amite River or Bayou Manchac, the latter being a distributary of the Mississippi which originated as a crevasse (Russell, 1939, p. 1216). The drainage from the entire city of Baton Rouge and the area immediately south of Baton Rouge flows eastward, away from the Mississippi River.

CLIMATE

The climate of the Baton Rouge area is rather mild. The area is within the modifying influences of the Gulf of Mexico and it is seldom subject to the more rigorous changes that are experienced in the northern and central parts of the state. As shown in figure 2 the minimum annual rainfall for the period of record was in 1924

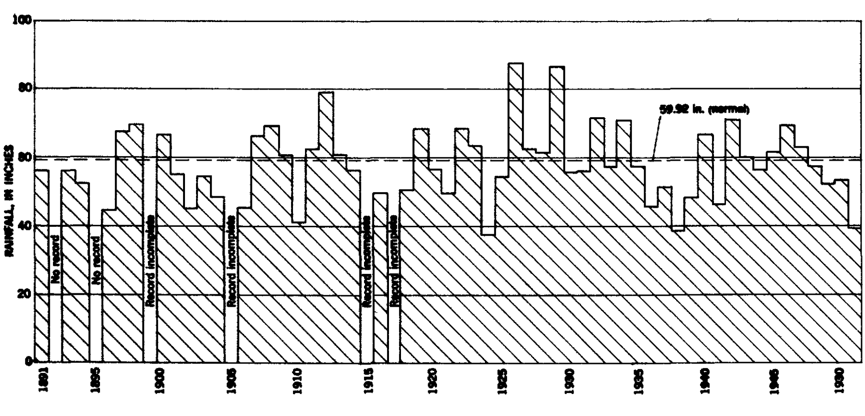

Figure 2. —Graph showing annual precipitation at Baton Rouge, La. for the years, 1891–1951.

when there was only 37.78 inches of rain and the maximum annual rainfall was in 1926 when there was 87.99 inches of rain. The average annual rainfall in the Baton Rouge area is 59.29 inches. As shown in figure 3, the greatest precipitation occurs in July and the driest months of the year are October and November. Throughout the remainder of the year the precipitation is relatively uniform.

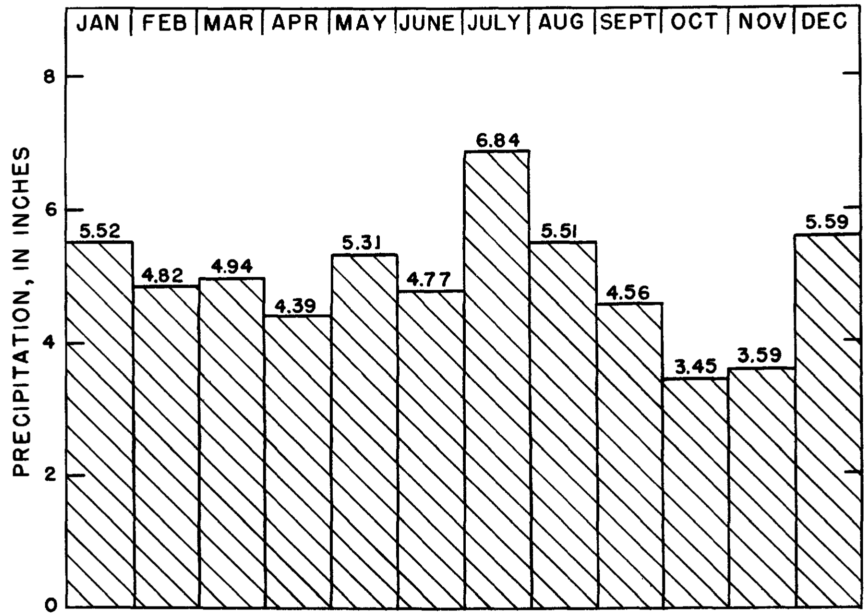

Figure 3.—Graph showing the normal monthly precipitation at Baton Rouge, La.

Figure 4 shows the probable frequency of different amounts of rainfall, based on 43 years of record (Louisiana Dept. of Public Works, 1952, p. 29). For example, a maximum rainfall of one day's duration of 6.0 inches can be expected once in every 6½ years.

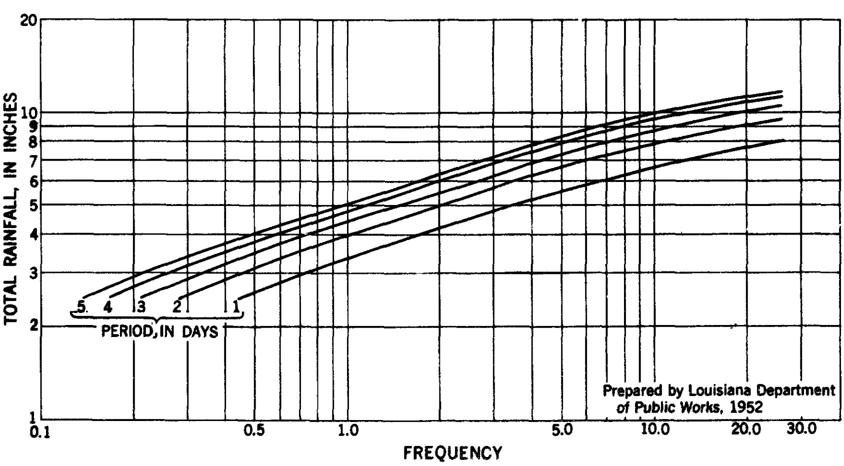

Figure 4.—Graph showing the probable frequency of different amounts of rainfall for periods from 1 to 5 days.

The average annual temperature is about 68° F. During the winter, temperatures below freezing are infrequent and usually occur during the night. During the summer, daily high temperatures of 100° F are common. According to temperature records provided by the U. S. Weather Bureau, Department of Commerce, both the minimum and the maximum temperatures for the period 1934–52 were in 1951, when there was a low of 13° F on February 2 and a high of 102° F on August 13.

GENERAL GEOLOGY

GENERAL FEATURES

The Baton Rouge area lies within the Coastal Plain province and is immediately underlain by sediments of Quaternary age. Figure 1 shows the Quaternary deposits to occur in the entire southern half of Louisiana and along the Mississippi and Red River lowlands in the northern half. In the Baton Rouge area these deposits are underlain by south-dipping sedimentary rocks of Tertiary age which crop out in the State of Mississippi and in the northern part of Louisiana. With the exception of the Quaternary deposits in the Mississippi River valley, the outcrop belts of the strata of Quaternary and Tertiary age roughly parallel the Gulf coast from Texas to Florida. The distribution and type of sediments in Louisiana as reported by Woodward and Gueno (1941) are shown in figure 1.

In Louisiana the geomorphic and geologic conditions are closely related in areas underlain by deposits of Quaternary age. The Mississippi River alluvial valley, the delta, and the low-lying coastal area are underlain by deposits of Recent age while the terraces in the region consist of alluvial deposits of Pleistocene age. The surface contacts between these deposits of different age generally are sharply defined by a scarp such as is evident on the east bank of the Mississippi River at Baton Rouge. In the subsurface this contact is not so easily determined as, in some places, the sediments of different ages are similar in appearance.

DEPOSITS OF RECENT AGE

In the Baton Rouge industrial area the deposits of Recent age are between the escarpment and the Mississippi River and blanket the area west of the river also. Fisk (1944, pl. 2, sheet 2) shows the distribution and configuration of the surface upon which the deposits rest and the ancient valley systems that have been filled by these sediments.

DEPOSITS OF PLEISTOCENE AGE

The deposits of Pleistocene age underlie the Recent deposits in the Mississippi alluvial valley and form the uplands to the east of the river. These sediments were deposited during the period when glaciation was predominant to the north. The lowering of sea level caused by the accumulation of ice caps and their subsequent release of water when thawed resulted in transportation and deposition of tremendous quantities of sediments. These deposits now form a thick blanket covering the area coastward from the uplands of Tertiary rocks in the northern part of the state. Fisk (1938) identified and named four different terraces in the upland which he correlated with the periodic lowering of sea level during Pleistocene time. These terraces cross Louisiana approximately between latitudes 30° N. and 31° N. In the Mississippi alluvial valley these terraces are not present and the deposits of Recent age overlie the older sediments. With the exception of about 3 or 4 miles along the northern border of East Baton Rouge Parish, the Baton Rouge area lies on the youngest and lowest terrace, named the Prairie terrace by Fisk (1938, p. 51). The belt along the northern border of the parish is on the second and next highest terrace which was called Montgomery by Fisk (1938, p. 56). Two older terraces occur at higher altitudes in the parishes to the north and in the counties of the southern part of the State of Mississippi.

DEPOSITS OF MIOCENE AGE

In the Baton Rouge area the sediments of Pleistocene age are underlain by sediments of Miocene age which have essentially the same appearance. It is therefore necessary to determine differences in age by fossil content and by correlations made on the basis of stratigraphic position. Samples of material from a depth of 2,025 feet in well EB-468 contain the small clam *Rangia (Miorangia) microjohnsoni*, which is an index fossil indicating the uppermost Miocene horizon (identification by Julia Gardner, U. S. Geological Survey). Shell fragments were reported to be found in a newly drilled well about 7 miles north of the industrial district at a depth of 1,825 feet. This depth for the "2,000-foot" sand correlates with logs of other wells in the area that do not record shell fragments. Drill cuttings from other wells penetrating the "2,000-foot" sand do not contain *R. (M.) microjohnsoni*; however, as the sand can be correlated throughout the area by stratigraphic position and hydrologic evidence, it must be assumed to be the uppermost sand of Miocene age throughout the area.

Fisk (1944, fig. 70) shows the contact between the deposits of Pleistocene and Tertiary age to be at a depth of more than 2,000 feet below sea level. This conforms closely to the determinations made on the basis of cuttings from well EB-468.

STRUCTURE

The Baton Rouge area is on the flank of the Gulf coast geosyncline, which trends approximately east-west along a line through Houma, 60 miles south of Baton Rouge. During the subsidence of this coastal area a relatively great thickness of deposits of Pleistocene age accumulated. These deposits, therefore, are wedge shaped, being thinnest near the outcrop areas in the north and thickening toward the axis of the geosyncline. Howe (1936, p. 38) estimates that the gravelly deposits of Pleistocene age reach a thickness of about 4, 000 feet immediately south of New Orleans, which is near the axis of the geosyncline.

According to Fisk (1944, fig. 70) the regional dip of the base of the Pleistocene deposits from latitude 31° N., the Louisiana-Mississippi State line, southward to Baton Rouge is about 42 feet per mile. His map indicates that southward from Baton Rouge the Quaternary sediments have been deposited on an irregular erosion surface of Tertiary age.

According to Fisk (1944, p. 9, fig. 6), regional fault zones in the Gulf Coastal Plain in Louisiana trend northeast and northwest. The northwest trending zones are along the principal tributaries to the Mississippi River, such as the Red, Ouachita, Arkansas, and White Rivers. These fault zones extend across the Mississippi River. Baton Rouge lies within the extension of the Red River fault zone as shown by Fisk (1944, fig. 6). Sufficient data are not available to determine conclusively if such regional faults have affected materially the occurrence of ground water in the Baton Rouge area. Such determination is exceptionally difficult, as the alluvial sediments of Pleistocene age are irregular in thickness and distribution. Thus, it is difficult to determine if an aquifer that is present at one place but is missing a short distance away has been displaced by a fault or has simply lensed out.

Local structural features, such as salt domes and local faults, greatly affect the occurrence of fresh ground water in the sediments of Pleistocene and Miocene age. For example, the local structure in and near the University oil field south of Baton Rouge has resulted in the contamination by salt water of most water-bearing sands below a depth of about 500 feet. It is possible that the upward migration of saline water in these faulted areas has resulted in the contamination of sands that yield fresh water at some distances from the center of the structure. More study will be required to establish the exact geologic and hydrologic relationship between the principal aquifers in the industrial area and the sands containing salt water in the vicinity of the oil fields.

GEOLOGIC FORMATIONS AND THEIR WATER-BEARING PROPERTIES

As shown by the geologic cross sections on plates 1 and 2 (see fig. 5 for locations) the alluvial sediments underlying the Baton Rouge area contain a number of fresh-water-bearing sands within 2,800 to 3,000 feet below the land surface. In the following dis-

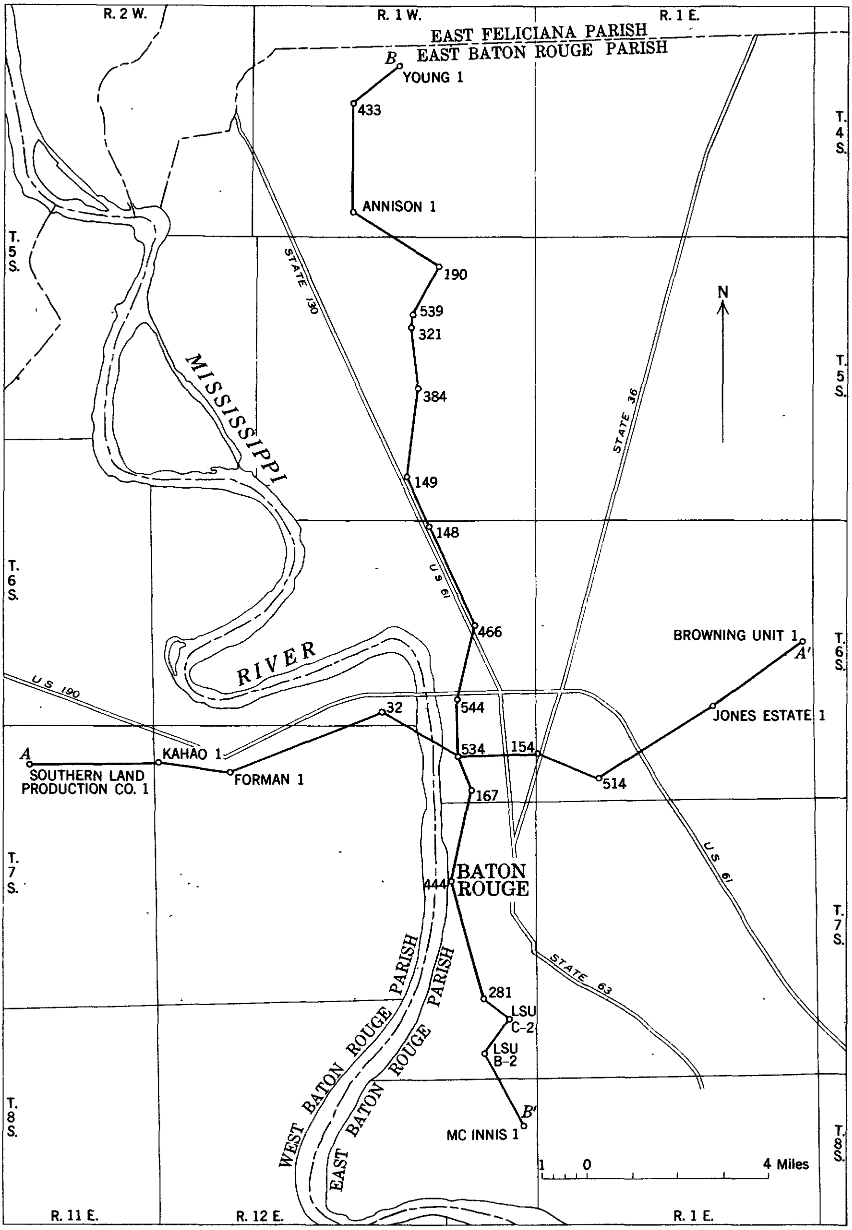

Figure 5. —Sketch map showing location of geologic cross sections on plates 1 and 2.

cussion the various aquifers have been named by depth as is common practice within the industrial district. The depths used apply only to the industrial district, as it is evident that the depth to each aquifer does not remain the same throughout the area, depending as it does both on surface altitude and on regional dip of the strata.

The correlation of each aquifer, particularly in the area outside the industrial district, may be modified by subsequent studies. Additional data on the occurrence of the aquifers are needed, as all sands are very similar in appearance and, owing to their mode of origin, may lens out abruptly. However, the available hydrologic information and well records indicate that the correlations shown on the cross sections are approximately correct.

The water-bearing properties of the sands of Pleistocene and earlier ages are rather uniform, indicating that the sediments were laid down under similar conditions. However, it should be kept in mind that determinations of hydraulic characteristics based on a single pumping test on a given aquifer may not be representative of the entire aquifer.

DEPOSITS OF RECENT AGE

GEOLOGIC CONDITIONS

The sediments of Recent age consist of unconsolidated sand, gravel, and clay deposited by the Mississippi River or its tributaries. The sand and gravel, generally overlain by clay, is a potential source of large ground-water supplies. As shown by figure 6, the grain size of the sand and gravel differs considerably, both areally and with depth. Mechanical analyses of samples near the same depth interval in wells less than 100 feet apart may show marked differences in grain size. An example of the vertical range is shown by curves 3 and 4 in figure 6. The yield from wells ending in these deposits may vary with location because of the areal nonuniformity of mechanical composition.

Deposits of Recent age are restricted to the narrow alluvial plain east of the Mississippi River and the wide plain west of the river. West of the river most wells pass through the Recent deposits and obtain water from underlying Pleistocene sands. The only wells known to obtain water from Recent sediments on the west side of the river and within the area of this report are wells WBR-7, -21, -30, and possibly -24. The sand-and-gravel phase of these deposits ranges up to about 200 feet in thickness and the base of the deposits is as much as 300 feet below the land surface as shown by logs of wells WBR-23 and -24. In some places the sand and gravel of Recent age may be in direct contact with the "400-foot"

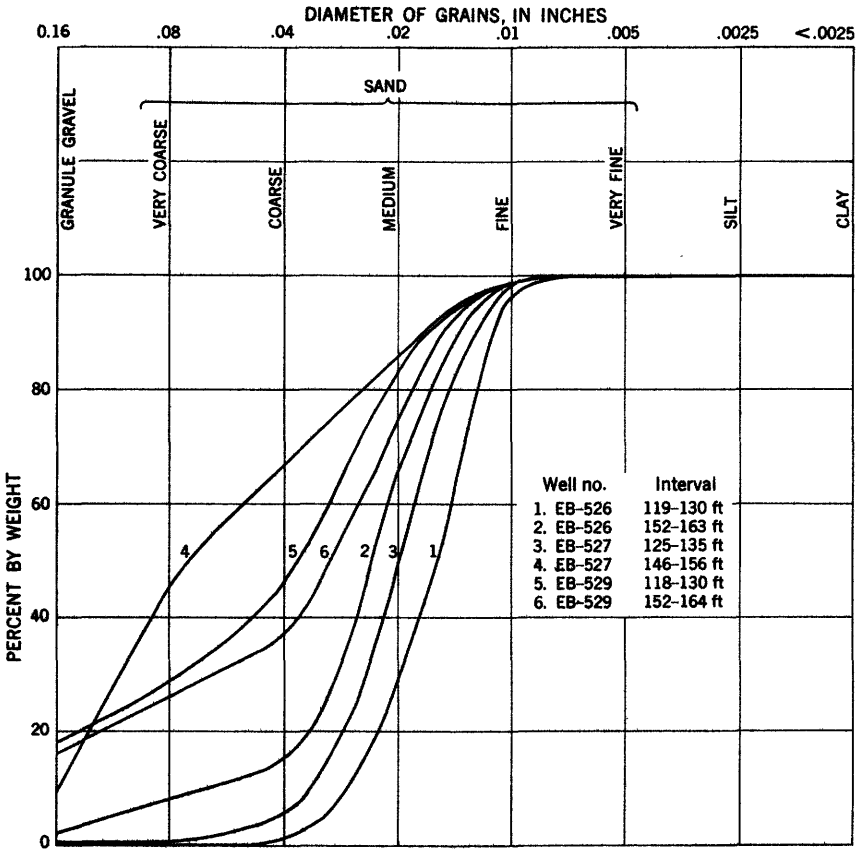

Figure 6. —Cumulative curves of mechanical composition for materials from deposits of Recent age.

aquifer of Pleistocene age. The logs of wells WBR-4 and -23 show only 7 to 10 feet of clay between the Recent deposits and the sand and gravel of the "400-foot" sand. Other well logs in the lowland area do not show this dividing clay and show the sand and gravel of both the Recent and the "400-foot" sand as one unit.

In the lowlands to the east of the river, several large-diameter industrial wells have been drilled into the deposits of Recent age. As shown on figure 7, the thickness of the sand and gravel deposits in the area adjacent to the industrial district increases toward the river to a maximum of more than 150 feet. The contours on the base of the sand and gravel bed show a gradual deepening toward the river. Immediately east of the area shown on figure 7 the Recent deposits feather out on the sediments of Pleistocene age.

In the Devils Swamp area, immediately north of the industrial district, the deposits of Recent age have not been tapped by wells. The Devils Swamp area therefore may offer a potential source of addi-

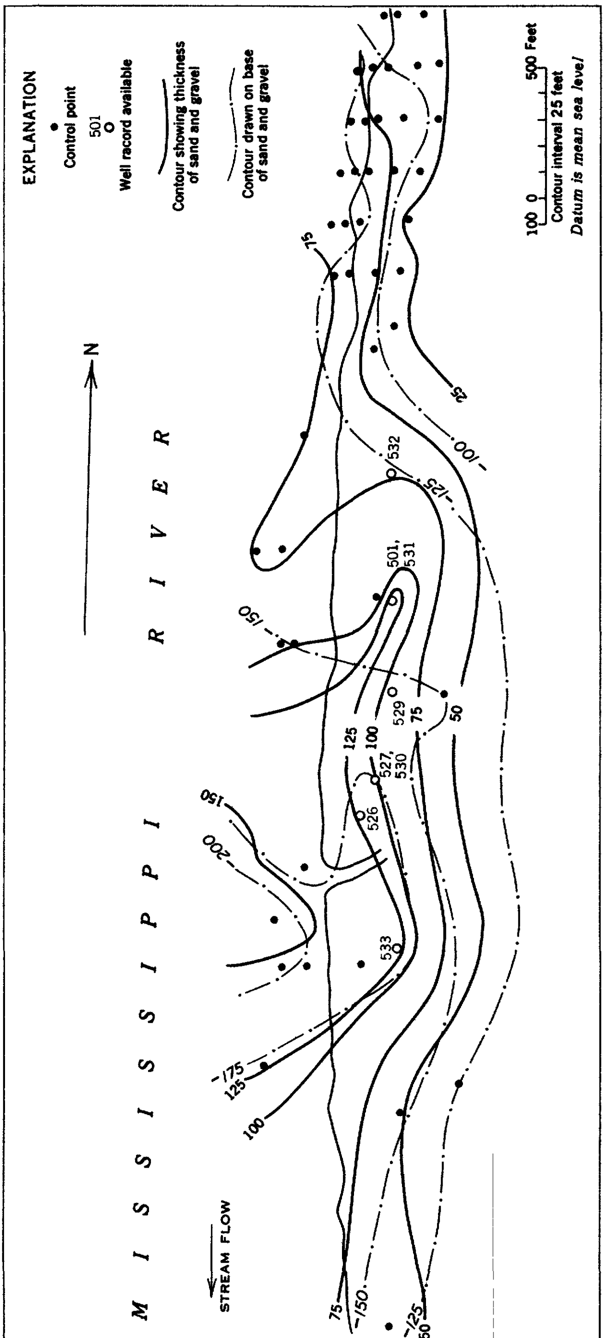

Figure 7.—Map showing altitude and thickness of the deposits of Recent age at the Esso Standard Oil Co. plant, Baton Rouge, La.

tional water; however, tests must be made to determine the character of the Recent sediments there. Such tests should include the determination of the quality of water available, as well as the hydrologic characteristics of the sediments.

At Duncan Point, adjacent to and south of the Louisiana State University, sand and gravel of Recent age occurs to a depth of at least 241 feet, and possibly to a depth of 350 feet. The logs of wells EB-236 and -241 show sand and gravel from a depth of 283 to 661 feet, the lower part of which is probably Pleistocene in age. An electric log of an oil-test well, sec. 65, T. 7 S., R. 1 W., shows sand and gravel, probably of Recent age, occurring to a depth of about 350 feet below sea level. As the deposits of Recent age in the Duncan Point area are thick and in places hydraulically connected with the river, they offer a large potential source of ground water for future development.

YIELD OF WELLS AND SPECIFIC CAPACITY

Reported yields from large-diameter industrial wells tapping deposits of Recent age range from 800 to 3,750 gpm. The sand and gravel is much better sorted and more permeable is some areas than in others, and consequently the specific capacity (yield in gpm per foot of drawdown) differs considerably. For example, the specific capacity of well EB-100 was 23.5 with a yield of 2,000 gpm; whereas the specific capacity of well EB-501, about 2 miles to the north, was 94.0 with a yield of 3,750 gpm. Even within the same well field, the specific capacities of wells may differ because of the different construction and development methods used and the areal changes in the mechanical composition of the sediments.

The specific capacities of wells in the Recent deposits may vary considerably with continuation of pumping. For example, the specific capacity of well EB-501 declined in about a year from 94, when originally developed, to about 30. Several causes may contribute to such declines in specific capacity: (1) Fine material may eventually migrate toward the well, clogging the interstices between the larger particles, and thus reduce the permeability of the zone around the well. Surging and further development may merely pull additional fines toward the well to replace those removed. (2) Mineral incrustation of the screen may reduce the efficiency of a well. Water from the Recent deposits generally contains much iron, which is an encrusting agent. (3) As pumping is continued the water level, when pumping, may decline below the top of the water-bearing sand and gravel. When this occurs, the sediments start to be dewatered and eventually the yields of the wells will decrease because of the reduction in the saturated thickness of the aquifer. (4) The viscosity of the water varies with temperature, as shown in the graph on figure 8 (Hunsaker and

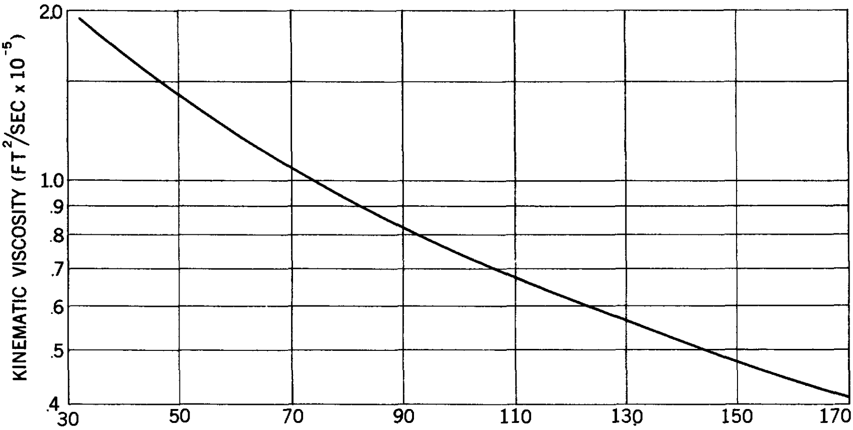

Figure 8. —Graph showing the relation of temperature of water to kinematic viscosity.

Rightmire, 1947, p. 449). Any lowering in temperature thus would reduce the specific capacity of a well. Because the flow of ground water is typically laminar (viscous), in contrast with the turbulent flow that generally occurs in surface streams, the rate and flow vary inversely in proportion with the viscosity, and a decline in the temperature of water increases the viscosity and consequently reduces the rate of flow, other conditions remaining the same. The temperature shown for well EB-501 (fig. 9) from November 1949 through July 1950, ranges from 73° F to 59° F, giving a range in Kinematic viscosity[1] of 1.01×10^{-5} square foot per second to 1.21×10^{-5} square foot per second. Therefore, at 59° F, kinematic viscosity would be about 1.2 times as great as at 73° F, and the specific capacity in this well at a given rate of pumping would be about 1/1.2 as great as at 73° F, or about 0.83 as great. Thus, any one or a combination of the above factors may cause a decline in specific capacity such as was observed in well EB-501.

QUALITY OF WATER

Water contained in the Recent deposits is generally hard and contains excessive amounts of iron in solution; consequently, untreated water from these sediments is not satisfactory for many uses. The water is of the calcium bicarbonate type, with a total hardness of about 200 ppm and with dissolved solids of about 300 ppm. The iron content ranges from 1.3 ppm as shown for well EB-100 in table 1 to about 18 ppm as shown for well EB-501 in table 2. The iron content of water from a given well may fluctuate considerably as pumping continues.

[1]Ratio of the stress intensity to the accompanying rate of fluid deformation.

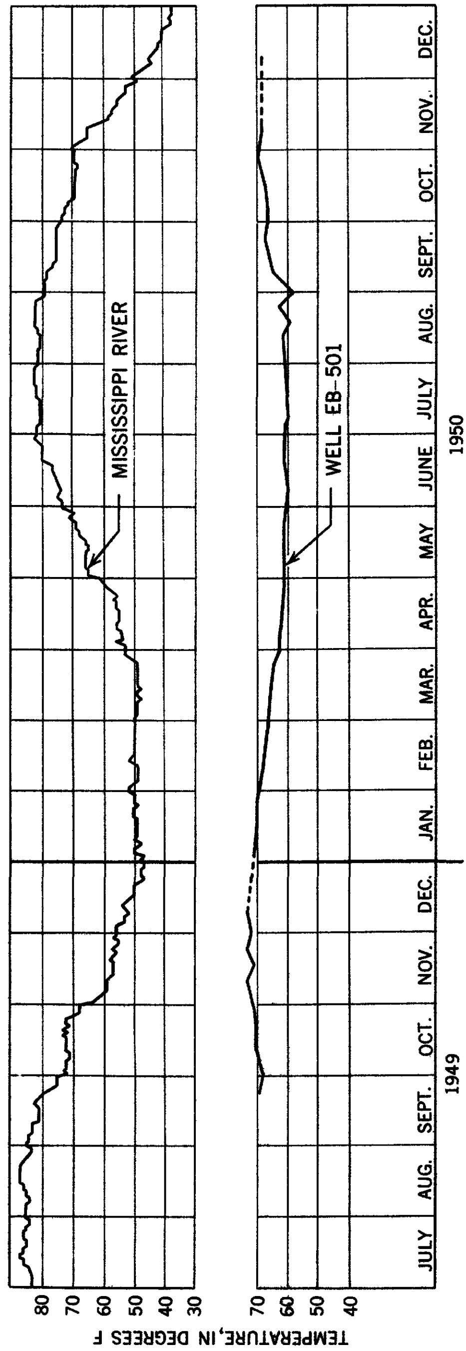

Figure 9. —Graphs showing temperature of water from Mississippi River and well EB-501.

RECHARGE FROM MISSISSIPPI RIVER

Well EB-501 is about 200 feet from the river and taps sands and gravels of Recent age. Periodic observations of the temperature of water from this well and the temperature in the river are shown graphically in figure 9 for the period of July 1949 through December 1950. From September 1949 through December 1950 the minimum temperature observed for the well water was 59° F and the maximum, 73° F. The temperature of water from wells in water-bearing sands other than Recent generally does not fluctuate more than a degree or two during the year.

Evidence of recharge from the Mississippi River to the Recent alluvium is afforded by this temperature correlation. According to Collins (1925, p. 98) the ground-water supply obtained at any depth to about 200 feet will have a uniform temperature, varying not more than a degree or two during the year, and averaging in most places a few degrees higher than the mean annual air temperature. The record for well EB-501 shows the temperature to have an annual fluctuation of 14° F with a minimum temperature of 9° F below the average annual temperature of the area. The large amount of heat represented by a rise of several degrees in temperature of millions of gallons of ground water could not conceivably be derived from the river water or from the air by conduction alone. Thus, warm water must have moved from the river to the wells causing the observed rise in temperature in the wells during the summer, and, likewise, cold water moved outward from the river into the aquifer during the winter. As noted on figure 9, there is a lag of about 2 to 3 months in the temperature rise and fall between the river and the water from the well. Such a lag, which of course would be less at wells closer to the river and more at wells farther away, is advantageous, if the water is used for cooling, because it provides cool water far into the summer.

As shown by table 2, which presents the chemical analyses obtained from water collected from well EB-501, the total iron content decreased from 18 ppm to about 8 ppm in a period of about a year. Water from the Mississippi River has an iron content of 0.06 to 0.30 ppm. Thus, it appears that after a period of continuous pumping the iron content gradually approached that of the Mississippi River as the water being pumped from the well was replaced in part by water entering the aquifer from the surface source.

When a well is pumped or allowed to flow, the hydrostatic pressure near the well adjusts itself to the shape of an inverted cone so that Darcy's relationship, $Q = PIA$ (Wenzel, 1942, p. 4), is satisfied at any point. If the well is near a stream that is hydraulically connected with the aquifer, the shape of the cone of pressure distribution is distorted so that the gradients between the stream and the well become steep in comparison with those on the side opposite. All other factors being equal, the flow in the distorted cone will follow Darcy's relation; that is, the flow toward the well will be greatest on the side nearest the stream where gradients are steepest. If pumping is continued for a long enough time, a condition of equilibrium will be effected in which most of the water pumped will be derived from the surface source. Thus, theoretically, the iron content of the water should continue to decline, though at a progressively lower rate, until the quality of water pumped approaches that of the river.

The hydraulic interconnection between the river and the Recent deposits is shown also by water-level fluctuations in the river and in wells ending in the Recent deposits. Figure 10 shows the water-level fluctuations recorded in well EB-242 and the observed gage height in the Mississippi River. Well EB-242 is about 2 miles from the river and 9 miles downstream from the surface-water gaging station on the Mississippi River bridge (see pl. 3).

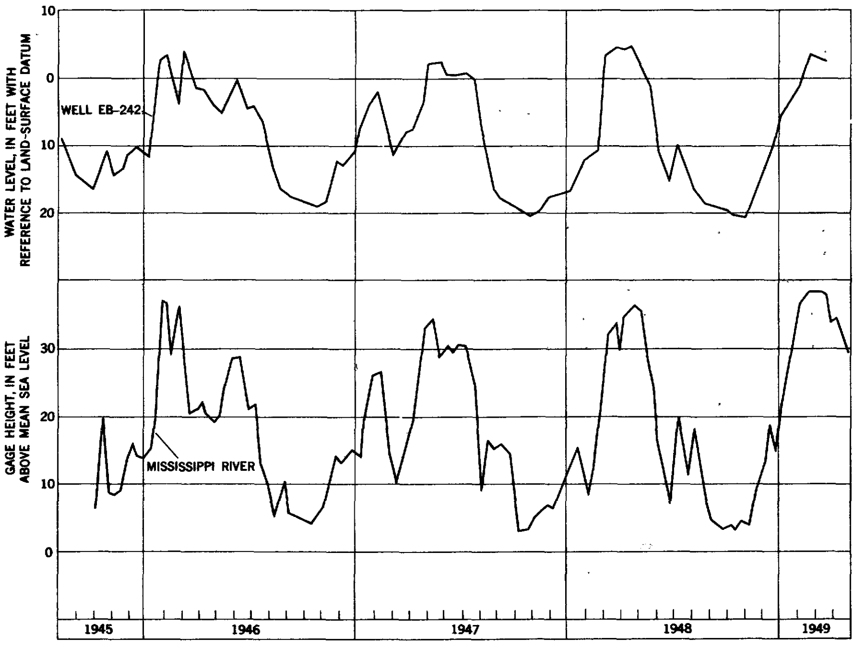

Figure 10.—Graph showing the relationship of water-level fluctuations in well EB-242 and the Mississippi River.

The fluctuations between river stage and ground-water level have a different magnitude and there is a slight lag in the rises and declines of water levels in well EB-242 from the fluctuations shown for the river; however, it is obvious that there is a direct relation between river stage and ground-water level.

Results of pumping tests on wells in the industrial district also show a hydraulic interconnection between the river and sediments of Recent age. Analyses of these tests indicate the presence of a recharge boundary within the area covered by the river. Part of the effect shown by these pumping tests may have been due to the thickening of the sand toward the river; however, the results of these tests and the other supporting data show conclusively that the Recent sediments are hydrologically interconnected with the river. Values for the coefficient of transmissibility determined from these pumping tests range from 140,000 to 210,000 gpd per foot and average about 170,000. The available information indicates that any predicted drawdowns based on these data should consider a recharge boundary at a distance of about 1,000 feet west of well EB-530 (fig. 13) and a possible barrier boundary to the east.

"400-FOOT" SAND

Geologic conditions.—The "400-foot" sand is one of the two principal water-bearing sands that yield water to large-diameter wells within the industrial district, the "600-foot" sand being the other. As shown by the cross sections on plates 1 and 2, this aquifer extends over a relatively large area and, within the industrial district, is separated from the "600-foot" and deeper sands by a clay bed. The cross sections indicate that to the north and west of the district this clay bed pinches out and the "400-foot" and "600-foot" sands become one hydrologic unit. Within the industrial district the clay separation is confirmed by the difference in water levels—the nonpumping water level in the "400-foot" sand is about 185 feet below the surface and in the "600-foot" sand, about 150 feet below the surface. This difference in water level is caused chiefly by the difference in the rates of pumping from the two sands. To the south, near the Louisiana State University, the "400-foot" sand appears to lens out and cannot be correlated definitely with the shallow sands in well EB-281 and the sand shown in the electric log of an oil-test well in sec. 65, T. 7 S., R. 1 W. (pl. 2). Additional information may make it possible to correlate these sands.

As shown in cross section *B–B'* plate 2, the "400-foot" sand is in contact with surface sands at a relatively short distance north of the industrial district. There may be many areas such as this at which recharge to the "400-foot" sand may take place. The shallow sand bed extending northward to the East Baton Rouge Parish border may be a continuation of the "400-foot" sand, and recharge may take place where the unit is in contact with local sand beds extending to the surface.

The cumulative curves of mechanical composition of materials from the "400-foot" sand show the sand in this aquifer to be very fine to fine grained. (See fig. 11.) Even though the sands are fine grained, they have a relatively uniform grade size and, conse-

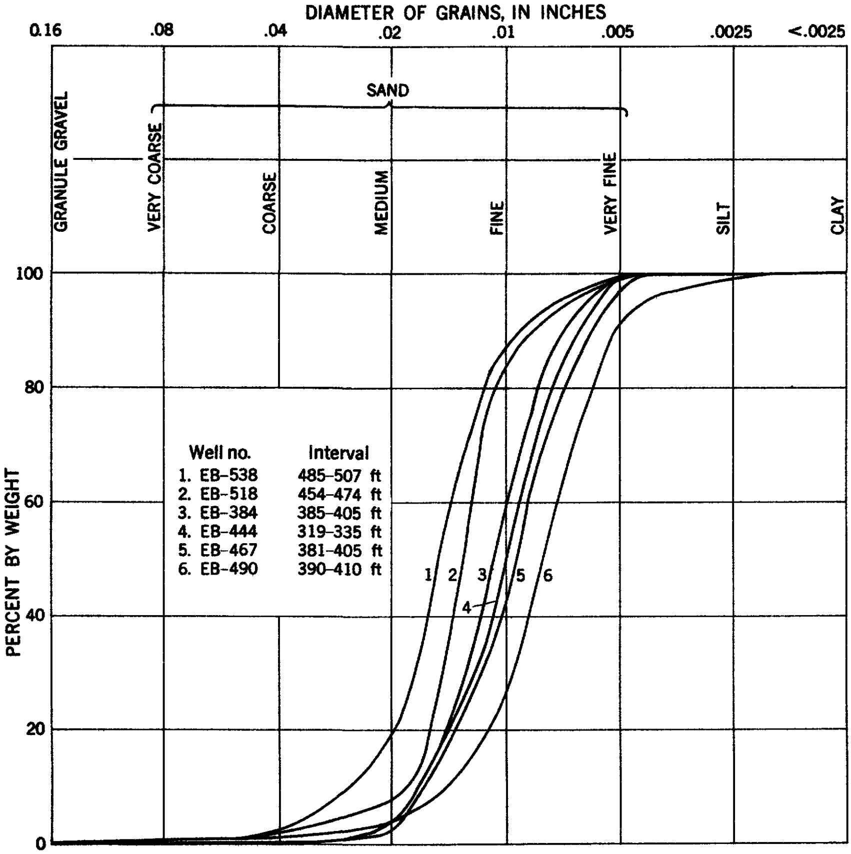

Figure 11. —Cumulative curves of mechanical composition of materials from the "400-foot" sand.

quently, the permeabilities are reasonably high, averaging about 350 Meinzer units. (See table 4.)

The sand is generally light gray to yellowish gray in color, with some iron oxide staining of individual grains of quartz. The sand has no unique characteristics, so that it cannot be differentiated on the basis of appearance from any of the deeper sands of Pleistocene age or older. (See sample descriptions in table 3.)

Figure 12 shows the differences in thickness and the subsea-level altitudes of the top of the "400-foot" sand in the industrial district. The sand is thickest in the central part of the industrial district where a maximum thickness of slightly over 200 feet is recorded. To the south, it thins to about 125 feet, and to the north, in the vicinity of Scotlandville, it thins to about 100 feet. Well logs in the northern part of East Baton Rouge Parish show an extreme range in the thickness of this sand. To the east and west of the industrial district, as shown in cross section *A–A'* plate 1, the thick-

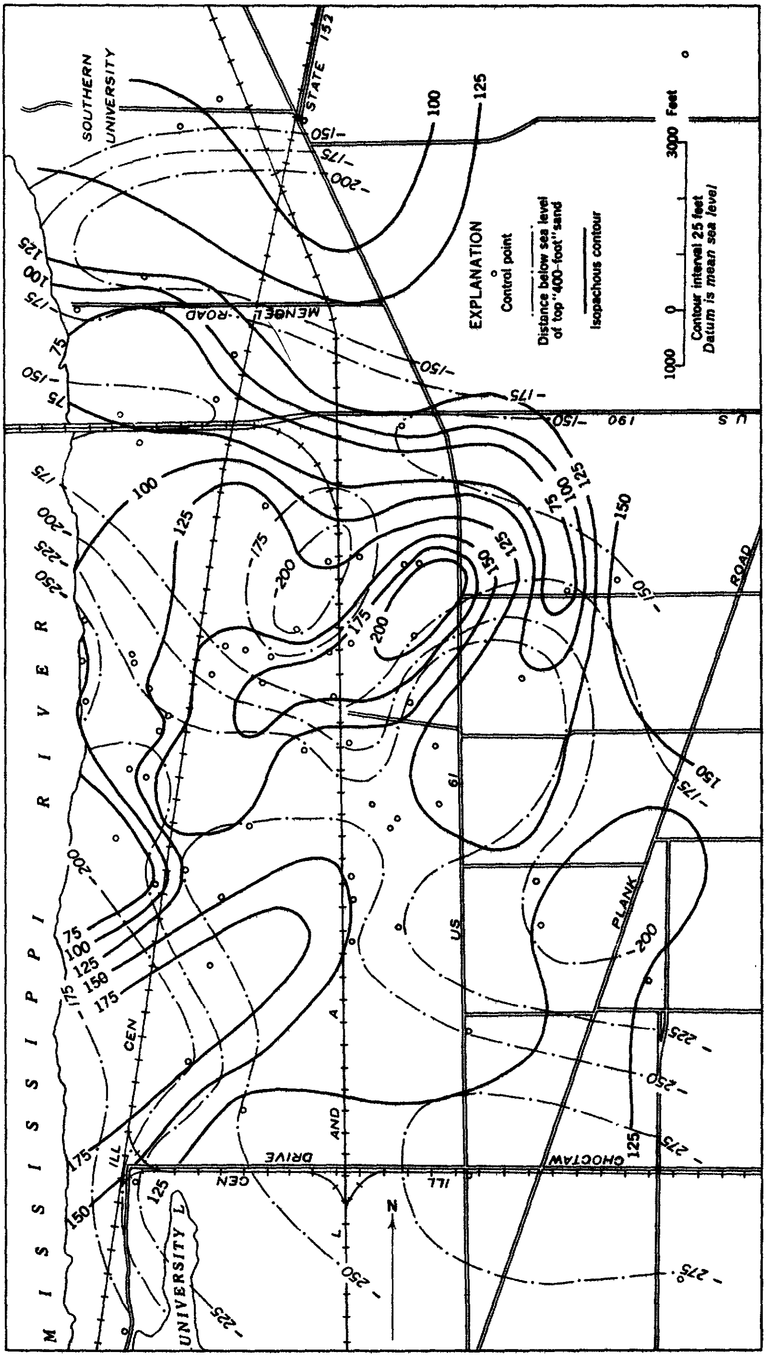

Figure 12. —Isopachous and structure map of the "400-foot" sand in the Baton Rouge industrial district.

ness of the sand is fairly uniform for several miles. The contours drawn on the top of the "400-foot" sand in the industrial district, figure 12, show the extreme irregularity of the surface. Some of the irregularities coincide with the changes in thickness of the sand; but, in general, the contours show a regional dip toward the south.

Hydrologic properties.—On figure 13, which shows the location and distribution of wells screened in the "400-" and the "600-foot" sands in the Baton Rouge industrial district, there are a total of 32 large-diameter wells (8 inches or more in diameter) screened only in the "400-foot" sand. Records indicate that of this total 16 are still in use for industrial purposes. The yields of wells screened only in this sand ranges from 750 to 1,500 gpm and averages about 1,100 gpm. The specific capacity ranges from 13.5 to 45.3 gpm per foot of drawdown and averages 29.6. These characteristics compare favorably with those obtained from wells screened at other depths in sands of Pleistocene and pre-Pleistocene age in the Baton Rouge area. This relatively high specific capacity, in addition to the low temperature (about 71°F) and constant quality of the water, makes this sand one of the most suitable for industrial purposes in the area.

As shown on table 4 in the section on "Hydraulic characteristics," the permeability of the "400-foot" sand, based on 11 field determinations, ranges from 240 to 527 Meinzer units and averages 357 Meinzer units. The storage coefficient as calculated from pumping tests (see table 4) ranges from 0.00026 to 0.00097, indicating artesian conditions.

As discussed in the section on "Hydraulic characteristics," determined values of the coefficient of transmissibility of the "400-foot" sand range from 32,400 to 76,500 and average 51,000 gpd per foot.

The coefficients of transmissibility and storage are of use primarily in predicting future drawdowns of water levels under given conditions of well spacing and pumping. Based upon an average transmissibility of 51,000 gpd per foot and a storage coefficient of 0.00037, which is considered the most representative value, the distance-drawdown curve (fig. 14) and time-drawdown curve (fig. 15) show the effect of pumping one well at a rate of 1,000 gpm. In computing these curves over the long period indicated in the figures, consideration was not given to possible hydrologic boundaries and changes in the character of the aquifer which probably exist. As shown by figure 14, a well pumping 1,000 gpm for a 100-day period from an infinite aquifer of the indicated characteristics would cause a drawdown of 21.8 feet at a distance of 500 feet from the pumped well. Figure 15, the time-drawdown curve, indicates that a well pumping at a constant rate of 1,000

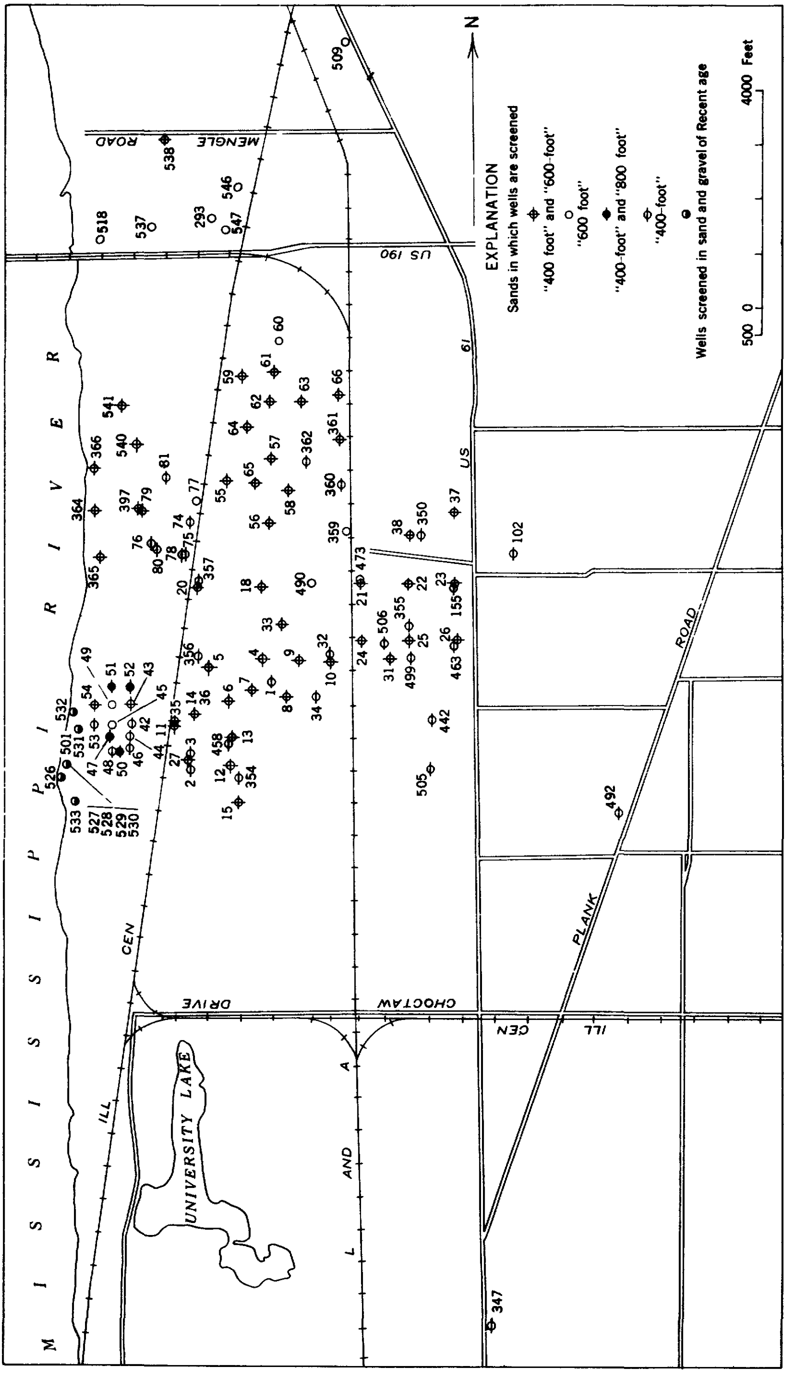

Figure 13. —Map showing the location of wells screened in the "400-foot" and "600-foot" sands and in deposits of Recent Age in the Baton Rouge industrial district.

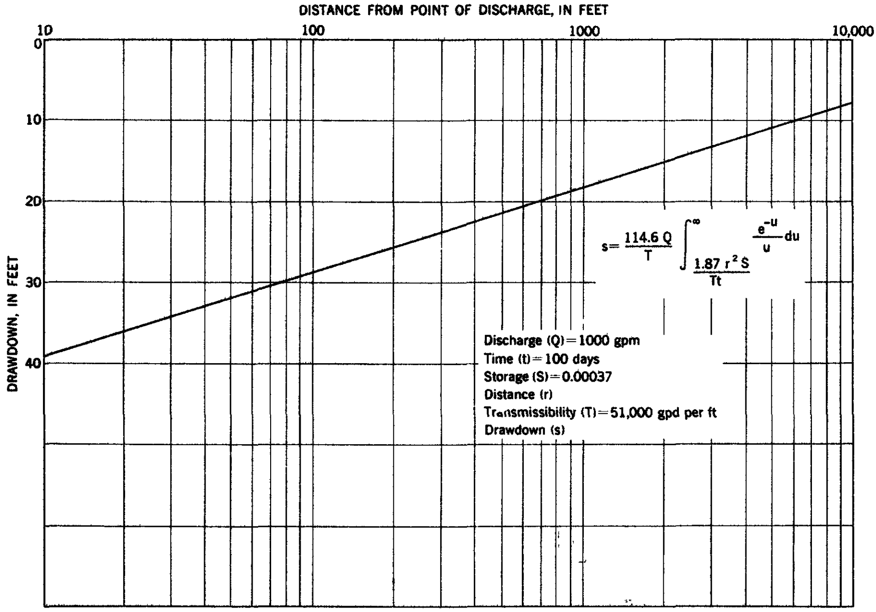

Figure 14.—Theoretical distance-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "400-foot" sand.

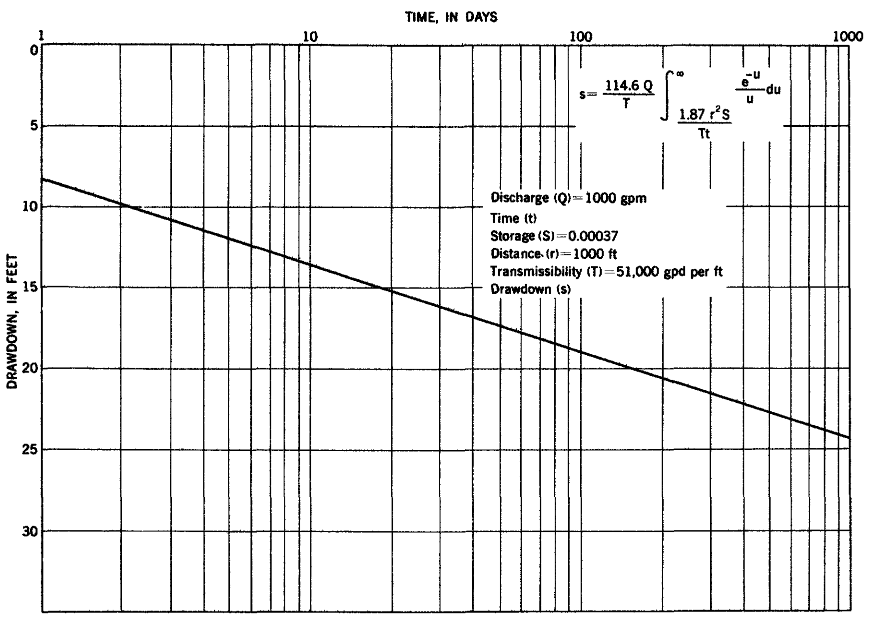

Figure 15.—Theoretical time-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "400-foot" sand.

gpm would cause a drawdown of 18.4 feet at a distance of 1,000 feet after pumping for 100 days.

Drawdowns within an idealized aquifer are directly proportional to the discharge; thus, the drawdown shown in figures 14 and 15 may be multiplied by the proper ratio to determine the drawdown at different rates of pumping.

Quality of water.—Analyses of water from four wells screened in the "400-foot" sand are given in table 1, together with analyses of water from other sands for comparison. The water from these wells is of the same general type, a moderately soft sodium bicarbonate water containing small amounts of magnesium and sulfate. The range in total hardness shown in table 1 is from 29 to 76 ppm and the range in total iron content is from 0.04 to 0.57 ppm, the last figure being from well EB-357 of the Esso Standard Oil Co. The chloride content is rather low, being 10 ppm or less, and, at present (1953), does not show any salt-water contamination. All water samples collected from wells screened in the "400-foot" sand for which the pH has been determined are alkaline, the pH ranging from 7.4 to 8.4. The silica content of this water, which ranges from 46 to 50 ppm, may exceed the tolerance recommended for some industrial purposes such as boiler-feed water, and the water may require treatment before use. The average temperature of water in the "400-foot" sand is about 71° F.

"600-FOOT" SAND

Geologic conditions.—The "400-" and "600-foot" sands are the most highly developed aquifers in the Baton Rouge industrial district. Only a relatively few producing wells are screened solely in the "600-foot" sand; most of the production from the sand is obtained from multiple-screened wells tapping both the "400-" and the "600-foot" sands.

The "600-foot" sand extends over a considerable area as a distinct hydrologic unit as shown in the cross sections on plates 1 and 2. Although additional data might refine the cross sections, they probably would not change the conclusion that the "400-foot" and "600-foot" sands form a single aquifer in the area some distance north and west of the Baton Rouge industrial district. This hydrologic interconnection is at a sufficiently great distance so that within the industrial district the two sands function as separate aquifers. The "600-foot" sand appears to be divided into two units south of the district, one unit lensing out and the other correlating with the sand at a depth of about 900 feet in the vicinity of the Louisiana State University. The migration of saline waters offers support to this correlation, as the "600-foot" sand contains brackish water as far north as well EB-493 (for location see pl. 3), thus showing a hydrologic interconnection between the salt-water-bearing sands in the vicinity of the Louisiana State University and the fresh-water-bearing sands of the "600-foot" aquifer.

The sediments of the "600-foot" aquifer are very similar in appearance to those of the "400-foot" sand. The plot of mechanical composition shown in figure 16 shows the sands to be medium to fine grained; however, some wells penetrate beds of coarse sand or gravelly material, such as is shown in the sample descriptions for well EB-534. (See table 3.)

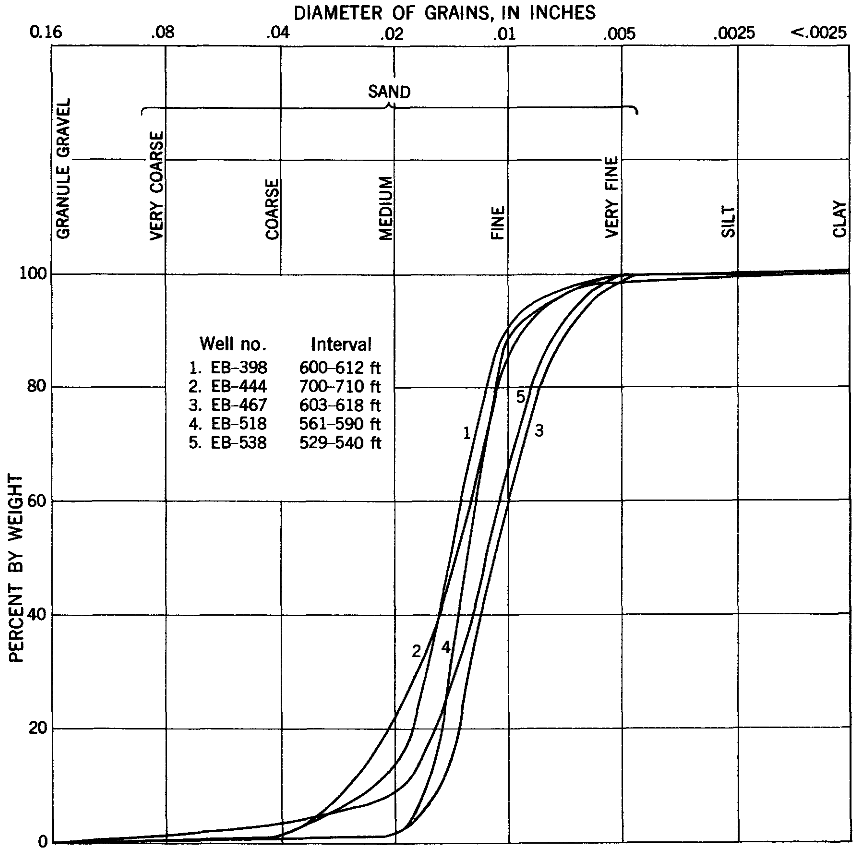

Figure 16.—Cumulative curves of mechanical composition of materials from the "600-foot" sand.

As shown in figure 17, the thickness of the "600-foot" sand has, in some places, extreme changes within short distances. The "600-foot" sand is similar to the "400-foot" sand in that its maximum thickness is in the central part of the industrial district. In this area it reaches a thickness of slightly more than 200 feet. North of the industrial district, between Mengel Road and Southern University, the sand thins to about 25 feet and to the south it thins to about 50 to 75 feet.

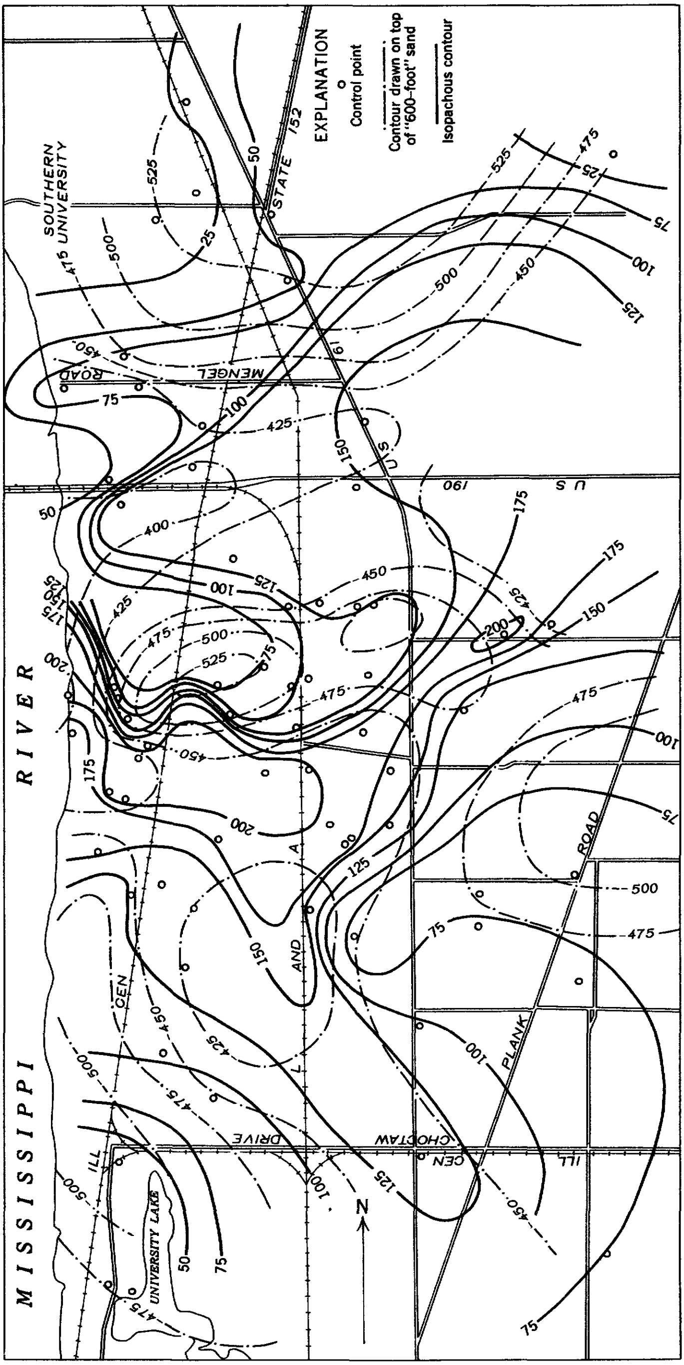

Figure 17. —Isopachous and structure map of the "600-foot" sand in the Baton Rouge industrial district.

A fairly uniform thickness is maintained both east and west of the industrial district as is shown on plate 1 and figure 17. The contours drawn on the top of the "600-foot" sand in figure 17 show that the surface is irregular and roughly complements the isopachous contours; this means that the bottom is fairly regular. In general, the central part of the industrial district is structurally high, the high trending in an east-west direction and the surface of each stratum dipping gently away from it both to the north and to the south. This structure is local, the regional dip of the "600-foot" sand being south to southeast, at a rate ranging from 10 to 26 feet per mile.

Hydrologic properties.—The recorded yields of wells screened in the "600-foot" sand in the Baton Rouge industrial district range from 430 to 1,200 gpm and average 908 gpm. Figure 13 shows the location of 66 wells screened in the "600-foot" sand. Only six of the wells all in use, are screened solely in the "600-foot" sand. The others are multiple-screened wells tapping the "600-foot" sand and either the "400-" or the "800-foot" sand. Of the 60 multiple-screened wells, 25 are now (1953) in use, making a total of 31 wells obtaining water from the "600-foot" sand in the Baton Rouge industrial area. Based upon the records of the six wells tapping only the "600-foot" sand, the specific capacity of wells in that sand ranges from 4 to 25 gpm per foot of drawdown and average 12.8 with an average yield of about 1,000 gpm. One interference test, using two observation wells at different distances from the pumped well, indicated the coefficients of transmissibility and storage of the "600-foot" sand to be 110,000 gpd per foot and 0.00041, respectively. The storage coefficient indicates that this aquifer is under artesian conditions. Values for the coefficient of permeability (see table 4) obtained from this pumping test range from 555 to 790 Meinzer units and average 669 Meinzer units, indicating that this sand is more permeable than the "400-foot" sand in the Baton Rouge industrial district.

On the basis of the assumption that the aquifer is homogeneous, infinite in extent, and without any lateral boundaries, and making use of the above-mentioned average coefficients of transmissibility and storage, the curves, figures 18 and 19, were prepared. The distance-drawdown curve, figure 18, shows that a well screened in an aquifer having those characteristics, pumping 1,000 gpm for 100 days, will cause a drawdown of 11 feet at a distance of 500 feet from the pumped well. The time-drawdown curve, figure 19, shows that there will be a drawdown of 19.5 feet at a distance of 1,000 feet from a well pumping 1,000 gpm for 100 days.

Quality of water.—The samples of water collected from wells screened in the "600-foot" sand (table 1) contained 40 to 55 ppm of silica, which might have to be reduced before the water would be satisfactory for some industrial purposes. With the exception of water collected from well EB-129, situated in the southern part

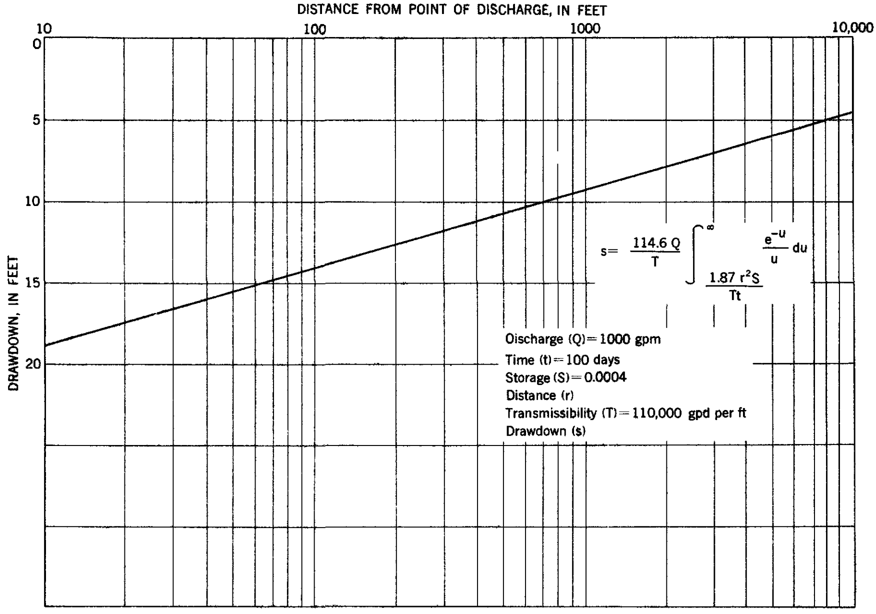

Figure 18. —Theoretical distance-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "600-foot" sand.

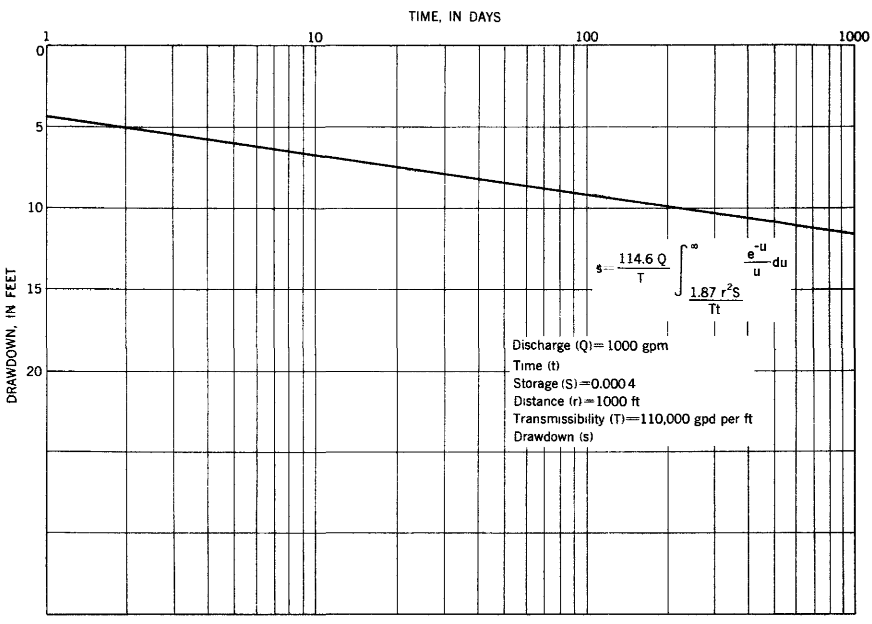

Figure 19. —Theoretical time-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "600-foot" sand.

of the Baton Rouge industrial district and showing evidence of possible salt-water contamination, the water from the "600-foot" sand is a moderately soft alkaline sodium bicarbonate water having a range in pH from 7.4 to 7.9. The chloride content of water collected from wells located in the central part of the Baton Rouge industrial district ranges from 7.0 to 9.4 ppm, indicating no contamination. The total iron content in the water collected from three wells (excluding that collected from wells EB-129 and -493) ranges from 0.05 to 1.2 ppm, indicating that water from some wells tapping the "600-foot" sand may require treatment before use for some industrial and public-supply purposes. The dissolved solids content in the same four samples ranged from 187 to 593 ppm. The average temperature of water in the "600-foot" sand is about 74° F.

"800-FOOT" SAND

Geologic conditions.—Several sand beds, irregular in thickness and areal extent, have been included in the "800-foot" sand. As shown in the geologic cross section in plate 2, some of these sands may be separated from the main sand body over a considerable area; however, sufficient hydrologic data are not available to determine if these lenticular or irregular beds are hydrologically connected. As the beds are within a definite depth zone, they are considered as one unit in this report. North of the industrial district the unit appears to pinch out and clay occupies its stratigraphic position. To the south the sand continues as a series of irregular, lenticular beds which are possibly in contact with the sands containing salt water in the vicinity of the Louisiana State University. As are the shallower sands, the "800-foot" sand is relatively continuous to the east and to the west of the industrial district. (See pl. 1.)

The cumulative curves in figure 20 show the sand to be chiefly fine to medium grained, the largest percentage of material being retained on a 0.01-inch-mesh screen. Samples of the material described in table 3 for well EB-534 indicate the presence of some coarse sand and gravel. The color and general appearance of the sand in the "800-foot" aquifer are similar to the sand in the other aquifers of Pleistocene age.

The thickness of this unit also is more uniform to the east and west of the industrial district than it is to the north and south. To the south of the district, as shown in the cross section on plate 2, the unit comprises several sand beds which have a total thickness comparable to that of the unit within the industrial district. It is difficult to determine the average thickness of the "800-foot" sand as it is so irregular and contains several individual sand beds. At well EB-534 in the central part of the district, the thickness of the sand, as shown by an electric log, is 80 feet.

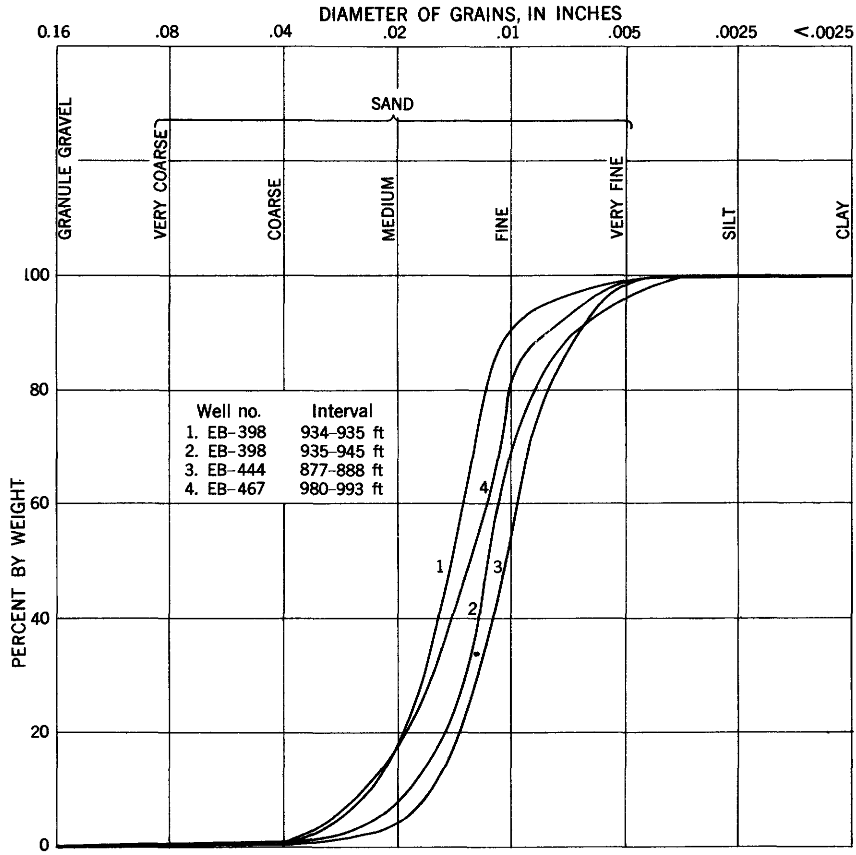

Figure 20. —Cumulative curves of mechanical composition of materials from the "800-foot" sand.

The regional dip of the "800-foot" sand is about 50 feet per mile in a southerly direction. The amount and direction of dip may range greatly in different localities, as is indicated by the irregular contact shown on plates 1 and 2.

Hydrologic properties.—As shown on figure 21 and in table 5, there are two large-diameter wells screened only in the "800-foot" sand in the Baton Rouge industrial district. There are three multiple-screened wells that tap the "800-foot" and one other sand in this area. The records for only one well (EB-467) screened only in the "800-foot" sand are complete. The yield from this well is 750 gpm, with a reported specific capacity of 12.1 gpm per foot of drawdown. The coefficient of transmissibility determined from one pumping test made in this sand was 24,000 gpd per foot. Because this test was a recovery test on the pumped well itself, it was not possible to determine the storage coefficient. However, as the "800-foot" sand is an artesian aquifer the coefficient of storage will probably range between 0.001 to 0.00001. Thus the effects of pumping can be approximated from figure 39.

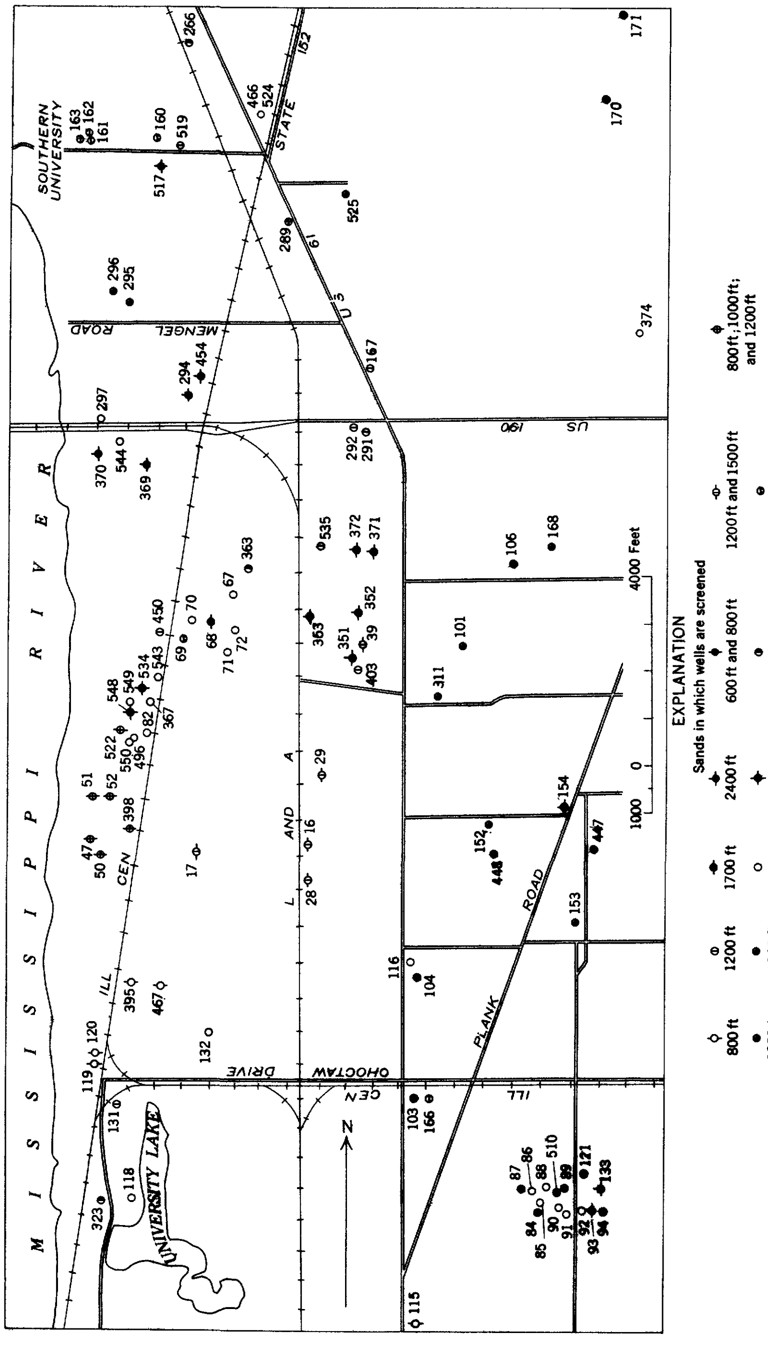

Figure 21. —Map showing the location of wells screened in fresh water sands occurring below the "600-foot" sand in the Baton Rouge industrial district.

Quality of water.—The chemical analysis made of water collected from well EB-120, screened only in the "800-foot" sand, indicates that this water is soft and does not contain objectionable quantities of iron. The dissolved solids content reported for water from this well is 208 ppm and the silica content was 23 ppm. The reported hardness was less than 10 ppm and the pH was 8.4. The temperature of the water from this sand is about 78° F.

"1,000-FOOT" SAND

Geologic conditions.—The "1,000-foot" sand is relatively thin and irregular; consequently, it is not a major source of ground water in the Baton Rouge area. The cross sections in plates 1 and 2 indicate that the sand occurs as a lens that is present only within the industrial district and its vicinity. However, it is quite possible that additional geologic data will show the sand to be hydrologically connected with an underlying aquifer outside the industrial district. The sand appears to lens out abruptly both east and west of the district, and it extends only a few miles to the north and south. As shown in plate 2, the sand may correlate with a sand bearing salt water in the vicinity of the Louisiana State University. The maximum thickness of this lenticular sand, about 90 feet, is shown by the log of well EB-466. (See pl. 2.) The sand apparently thins in all directions from the vicinity of well EB-466 and is about 40 feet thick in well EB-534 in the center of the industrial district.

As shown by figure 22, the sand is coarse to fine grained and has a relatively nonuniform distribution of grade sizes. The appearance of the sand is similar to that of the other sands of Pleistocene age in the industrial area and, as shown in the description of samples (table 3), in some places it cannot be definitely separated from the overlying "800-foot" sand.

Hydrologic properties.—Table 5 shows that, of five wells screened only in the "1,000-foot" sand, one (EB-163) at Southern University is still in use. Two multiple-screened wells, EB-398 and -522, that tap the "1,000-foot" sand and the "800-" and "1,200-foot" sands in the Baton Rouge industrial district are in use. The reported specific capacities for two wells screened only in the "1,000-foot" sand are 15 and 26 gpm per foot of drawdown. Because pumping tests could not be made on any of the wells, the hydraulic characteristics of the sand were not determined. The sand is thin and limited in areal extent and therefore the aquifer does not constitute a large potential source of ground water in this area.

Quality of water.—Even though there are no complete analyses made of water collected from the "1,000-foot" sand, it is evident from a partial analysis made of water collected from well EB-163 that the quality of the water is similar to that from the other aquifers of Pleistocene age. This analysis indicates that the chloride content is negligible, being less than 10 ppm. The temperature of water obtained from wells screened in this sand is about 77° F.

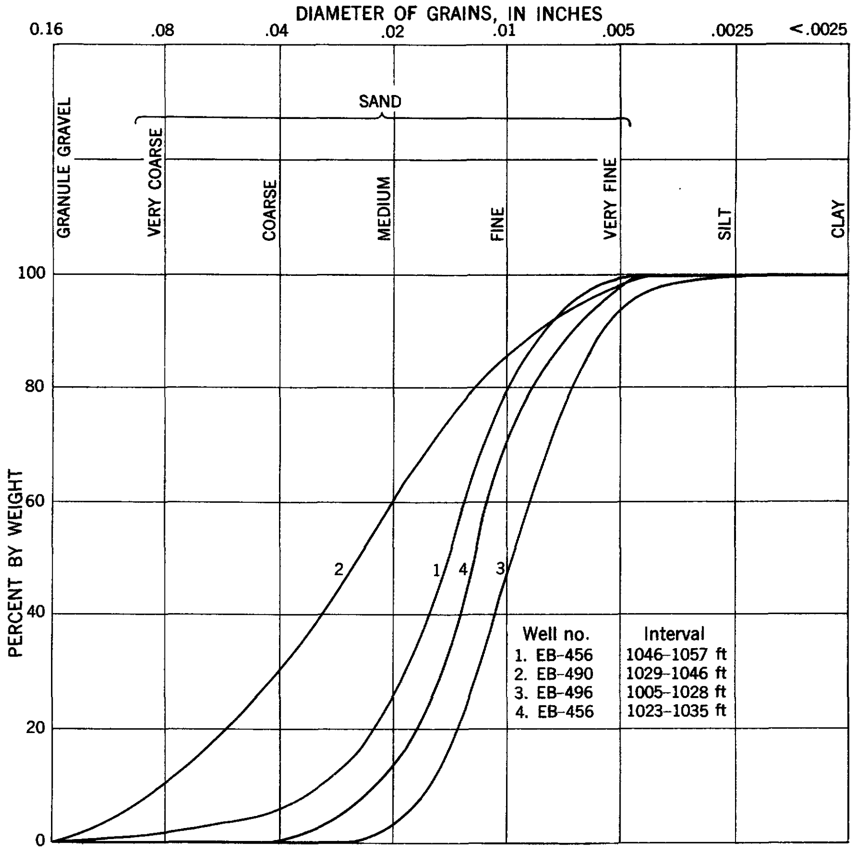

Figure 22. —Cumulative curves of mechanical composition of materials from the "1,000-foot" sand

"1,200-FOOT" SAND

Geologic conditions.—Although only a few wells obtain water from the "1,200-foot" sand in the industrial district, the aquifer constitutes the largest potential and relatively untapped source of ground water of any of the shallower sands of Pleistocene age. In the future, "1,200-foot" sand will undoubtedly be developed to a much greater extent for the following reasons: Within the industrial district, pumping tests indicate the sand to have a relatively high permeability; the static water levels are within 10 to 40 feet of the land surface; and the quality of water contained in the aquifer is satisfactory for most purposes. The temperature is about 81° F.

As shown in plates 1 and 2, the "1,200-foot" sand is more continuous and extends over a greater area than either the "800-foot" or the "1,000-foot" sand. The thickness of the sand is much more uniform in an east-west direction from the industrial district than it is to either the north or the south. The electric log of well EB-534, in the central part of the industrial district, shows the sand to be 100 feet thick. The aquifer appears to be thinnest in the southern part of the area in the vicinity of Louisiana State University. As shown in cross section *B–B'*, plate 2, the sand is about 40 feet thick in well EB-444 and about 20 feet thick in well EB-281. The geologic structure of the University oilfield may have affected the thickness of these sands; moreover, the structure may interrupt the continuity of the shallow sand beds. Thus, the correlation shown on plate 2 should be considered tentative, as additional data may alter materially the interpretations. The aquifer has a regional southerly dip of about 45 feet per mile but, as is shown in cross section *B–B'*, the dip at any given locality may differ considerably from this amount.

East and west of the district the aquifer contains clay beds which are apparently local in extent; to the north and south, however, the unit is composed principally of sand. The sandy material is generally a light gray to brownish gray and is similar in appearance to the sands constituting the other aquifers of Pleistocene age. The cumulative curves in figure 23 show the sand in the aquifer to be medium to fine grained. The grain size is very uniform for most samples of material tested. A description of the samples obtained from wells within the industrial area is given in table 3.

Hydrologic properties.—As of 1953, 4 wells screened only in the "1,200-foot" sand in the Baton Rouge industrial district were in use; however, there are 3 multiple-screened wells which obtain part of their water from this sand. One well (EB-403) screened only in the "1,200-foot" sand has a yield of 1,350 gpm, with a specific capacity of 38.5 gpm per foot of drawdown. Records of yields and pumping levels in other wells screened in this sand were not available to the writers.

The coefficients of transmissibility determined in two recovery tests, one in a well owned by the Esso Standard Oil Co. and the other in a well owned by Copolymer Corp., were 79,000 and 126,000 gpd per foot, respectively, averaging about 107,000 gpd per foot. Because water-level observations were made only in the pumped wells during recovery, it was not possible to compute the storage coefficient, however, as for the "800-foot" sand, drawdowns can be approximated from figure 39.

Quality of water.—Chemical analyses made of water collected from three wells screened only in the "1,200-foot" sand in the Baton Rouge industrial district indicate that the water is of sodium bicarbonate type with small amounts (less than 0.35 ppm) of iron

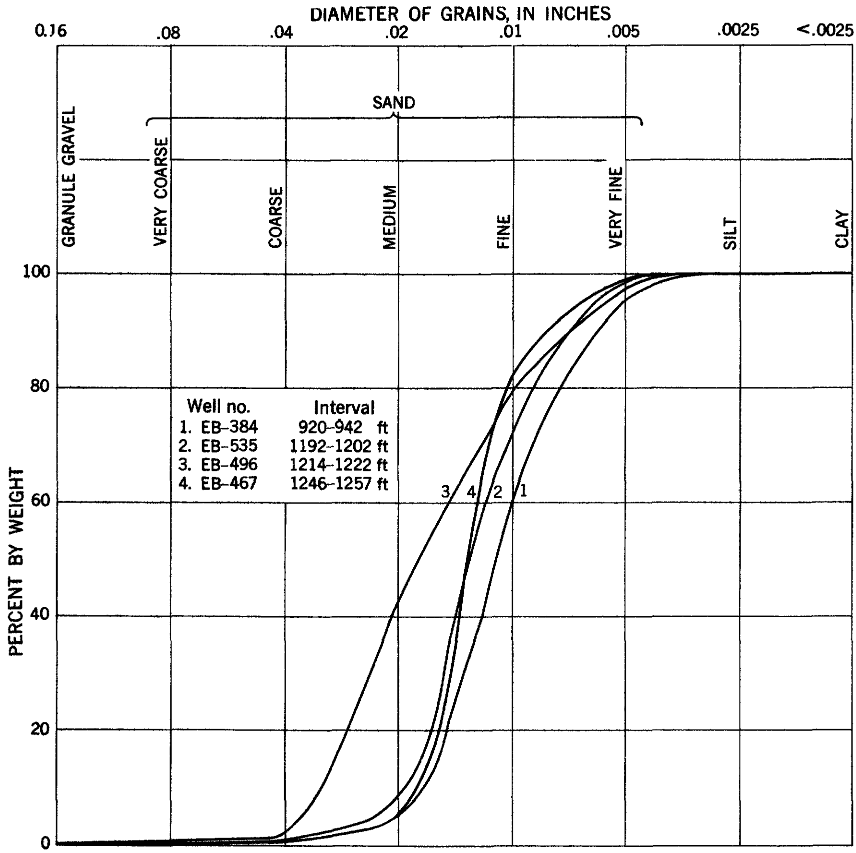

Figure 23. —Cumulative curves of mechanical composition of materials from the "1,200-foot" sand.

and is alkaline, having a pH ranging from 7.7 to 8.1. The water in this aquifer is very soft, having a total hardness of less than 10 ppm. The chloride content is about 5 ppm, indicating that there is no salt-water contamination at the present time. The silica content ranges from 30 to 52 ppm, and thus this water may require treatment for some industrial uses. The temperature of the water from the "1,200-foot" sand is about 81° F.

"1,500-FOOT" SAND

Geologic conditions.—No industrial wells now in use are screened in the "1,500-foot" sand; however, it is one of the principal aquifers used for the Baton Rouge public supply. In the central part of the industrial district the sand is generally thin and in some places is not present. As shown in cross section *B–B'*, plate 2, the sand extends from the East Baton Rouge-East Feliciana Parish border southward to the fringe of the industrial district where it lenses out. West and south of the industrial district there is no principal water-bearing sand in the stratigraphic position to be expected for this sand. On the eastern fringe of the district, however, the sand is present as a thick unit that forms a highly productive aquifer.

In the northern part of East Baton Rouge Parish the sand maintains a relatively uniform thickness of about 100 feet, as is shown by cross section *B–B'*, plate 2. East of the industrial district the sand thickens abruptly to about 200 feet and reaches a maximum thickness of 280 feet as shown by the log of well EB-514. (See pl. 1.) The dip of the "1,500-foot" sand changes locally, but in the northern part of East Baton Rouge Parish the regional dip of the top of the "1,500-foot" sand is approximately 45 feet per mile to the south.

As shown in the description of samples from well EB-468 (table 3), the sediments of the "1,500-foot" sand are olive gray to yellowish gray. The section includes some beds of silty clay and sandy clay which apparently are oxidized. The sands generally are fine grained, the largest percentage of the sample being retained on a 0.01-inch screen. The grade size is relatively uniform, only a small percentage of coarse sand or very fine material being present (fig. 24). Some individual beds contain coarse sand; for example, the sand described between 1,417.5 and 1,440 feet from well EB-468.

Hydrologic properties.—The "1,500-foot" sand yields water to about 10 wells for public supply in the Baton Rouge area; consequently, in order to prevent excessive drawdowns, industries have not installed wells screened in this sand. Plate 3 and figure 21 show the location and distribution of wells screened in the "1,500-foot" sand and table 5 gives the well-construction data, owner, and status. The yield of wells screened in this sand averages 600 gpm and the recorded specific capacity for one well screened only in this sand is 25 gpm per foot of drawdown.

Even though there are a number of unused and used wells screened in the "1,500-foot" sand in the Baton Rouge industrial district, it was not feasible to make pumping tests because of the time limitation on the investigation and the impracticability of controlling the pumping to the necessary extent. However, the yield of wells and the thickness of the sand indicate that relatively large quantites of water may be obtained from this aquifer.

Quality of water.—Analyses of water from two wells screened in the "1,500-foot" sand are given in table 1. The water from the sand is a very soft sodium bicarbonate water containing small amounts of magnesium and sulfate. The total hardness of the two samples analyzed is 2 and 3 ppm, respectively, and the total iron content is about 0.25 ppm, indicating that this water requires no treatment for removal of these constituents before use for public sup-

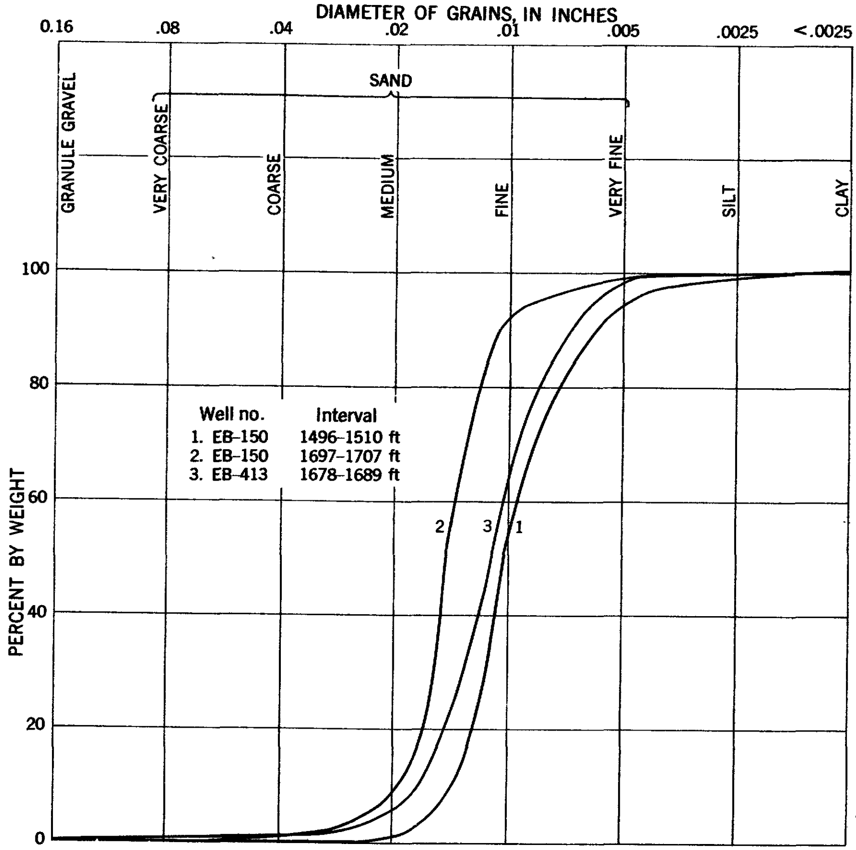

Figure 24. —Cumulative curves of mechanical composition of materials from the "1,500-foot" sand.

ply. The chloride content is low, 4 ppm or less, and the pH values (8.3 and 8.6) indicate that the water is alkaline. The silica content of the samples was 26 and 31 ppm, which may exceed the tolerance recommended for some industrial purposes, such as boiler-feed water. The temperature of water obtained from wells screened in this sand is about 85° F.

"1,700-FOOT" SAND

Geologic conditions.—The "1,700-foot" sand is very irregular. As indicated on the cross sections in plates 1 and 2, it appears to be lenticular; however, it is believed that these lenticular masses are hydrologically interconnected throughout most of the area to the south and west of the industrial district. Immediately north and east of the industrial district the sand is not found in most wells and, as is shown by the log of well WBR-32, its stratigraphic position is occupied by clay. An electric log made on well WBR-32 confirms the driller's log, which indicated the absence of both the

"1,500-" and the "1,700-foot" sands at the site. The sand appears to extend to the south and to the east as a relatively thin bed which is irregular in occurrence and contains scattered beds of clay. The electric log of well EB-534 shows the sand to be about 120 feet thick; however, it appears to thin rapidly in all directions. The sand was not found in well EB-154 and, according to the electric log of well EB-514, about 1.3 miles to the east, it is only 20 feet thick there. Owing to its small areal extent and thickness, the "1,700-foot" sand is not considered to be important as a potential source of large additional quantities of water in the Baton Rouge area.

The cumulative curves in figure 25 show the sands of this aquifer to be composed principally of medium- to fine-grained material; however, some samples contain a minor amount of coarse sand. In color and texture the sand is very similar to the sands of the other aquifers of Pleistocene age in the Baton Rouge industrial area.

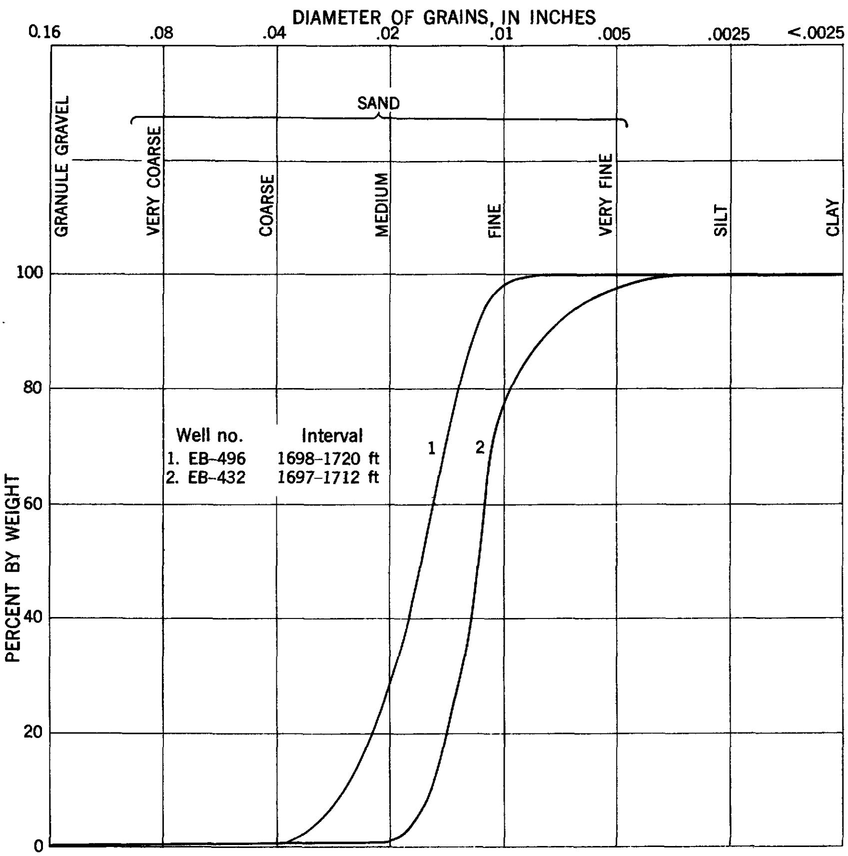

Figure 25. —Cumulative curves of mechanical composition of materials from the "1,700-foot" sand.

Hydrologic properties.—Present records indicate that there are five large-diameter wells screened in the "1,700-foot" sand supplying water for public-supply or industrial purposes. Of these, 3 are screened only in the "1, 700-foot" sand and the other 2 are screened in 1 or more of the other aquifers. The yield from wells screened only in this sand ranges from 850 to 1, 245 gpm and averages about 1, 030 gpm; the wells have a recorded specific capacity range of 20. 2 to 40. 0 gpm per foot of drawdown, averaging about 29. 9.

The coefficient of transmissibility obtained in a recovery test made on a well owned by the Ethyl Corp. was 32, 000 gpd per foot. Because this aquifer also is under artesian conditions; a storage coefficient may range from 0. 001 to 0. 00001.

Quality of water.—Analyses of water from two well screened only in the "1, 700-foot" sand are given in table 1. The water from these wells is a soft sodium bicarbonate type containing small amounts of magnesium and sulfate. The range in total iron content is 0. 04 to 0. 01 ppm. The total hardness is less than 3 ppm. As shown by the table of chemical analyses, the chloride content is low, being 5 ppm or less and, as of the present time (1953), the water does not show any effects of salt-water contamination. The water is alkaline, two samples having a pH of 8. 1 and 8. 4, respectively. The silica content of this water ranges from 26 to 30 ppm, which may exceed the tolerance recommended for some industrial purposes. The temperature of water from the "1, 700-foot" sand is about 87° F.

"2,000-FOOT" SAND

Geologic conditions.—The "2, 000-foot" sand is considered to be the uppermost aquifer of Miocene age in the Baton Rouge area. As previously described, the fossil *Rangia (Miorangia) microjohnsoni,* which is considered the index fossil indicating the uppermost Miocene horizon, is present in the drill cuttings at a depth of 2, 025 feet from well EB-468. Shell fragments, which probably indicate the top of the Miocene, were reported at a depth of 1, 825 feet from a newly drilled well about 7 miles north of the industrial district. Throughout the area the "2, 000-foot" sand correlates with the sand containing *R. (M.) microjohnsoni* in well EB-468, and consequently the entire unit is considered to be of Miocene age. The "2, 000-foot" sand is one of the most highly developed aquifers in the industrial district, and pumpage from it ranks second only to the pumpage from the "400-" and "600-foot" sands.

As shown in the cross sections on plates 1 and 2, the "2, 000-foot" sand is a relatively thick and continuous unit throughout the area. In the central part of the industrial district the aquifer contains some relatively thin beds of clay which appear to be continuous to the north and south, but appear to lens out to the east and west. Thus, all the sand beds are believed to be hydrologically interconnected and they are included in one unit in this report. Immediately north of the district very few wells are drilled below a depth of 2,000 feet, and the clay beds shown in section *B–B'*, plate 2, below the upper sand of the "2,000-foot" sand may be much less continuous than indicated.

The sand has a total thickness of about 300 feet, as shown by the electric log of well EB-534 in the central part of the industrial district. Many of the other wells tapping this sand do not completely penetrate the aquifer and therefore the changes in thickness are not well known. Electric logs of wells to the east and west of the district indicate that the sand thins to 100-150 feet in both directions. In the vicinity of the Louisiana State University the sand appears to have been displaced in some wells; however, about 150 feet of sand of this unit is shown in the electric log of oil-test well, William Helis, L. S. U., No. B-2. (See cross section *B–B'*, pl. 2.)

The regional dip of the "2,000-foot" sand is much less than that of the overlying aquifers of Pleistocene age. As shown by cross section *B–B'*, plate 2, the top of the sand remains at essentially the same altitude throughout the northern part of East Baton Rouge Parish; however, to the south, in the vicinity of the Louisiana State University, the sand dips south at a rate of about 75 feet per mile. As shown in the cross section *A–A'* (pl. 1), in West Baton Rouge Parish the southerly dip of the "2,000-foot" sand increases markedly toward the west. Otherwise, in an east-west direction the sand appears to be fairly uniform in dip, local differences in the altitude of the top of the sand being caused by changes in the thickness of the sand.

The sand is generally light gray to light brownish gray with no iron oxide staining of quartz grains. (See table 3.) The cumulative curves in figure 26 show the sand to be fine grained and of a uniform size; however, some beds contain small amounts of gravel.

Hydrologic properties.—According to available records, 20 wells are screened in the "2,000-foot" sand in the industrial district, 12 in that sand alone and 8 in the "2,000-foot" sand and one or more of the other aquifers. The reported average yield from wells screened only in this sand is about 1,000 gpm, with a range of 750 to 2,000 gpm. The reported specific capacity of these wells ranges from 8 to 38 gpm per foot of drawdown and averages 15.9. In one pumping test two observation wells screened only in the "2,000-foot" sand were measured to determine the hydraulic characteristics of the aquifer. Five values of the coefficient of transmissibility computed from this test ranged from 209,000 to 289,000 gpd per foot and averaged 236,000, and the storage coefficient ranged from 0.00057 to 0.00079, averaging about 0.00067. The permeability based on five determinations of transmissibility ranged from 1,100 to 1,520

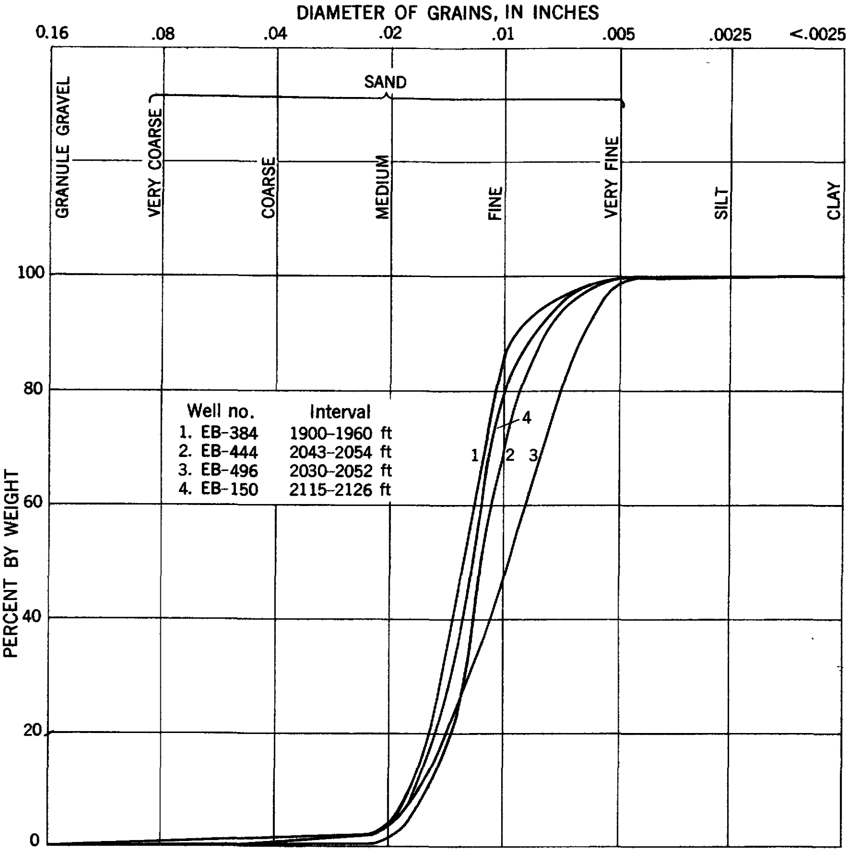

Figure 26.—Cumulative curves of mechanical composition of materials from the "2,000-foot" sand.

Meinzer units, averaging 1,260 Meinzer units. The curves, figures 27 and 28, were computed using the above-mentioned average coefficients of transmissibility and storage. As shown by the distance-drawdown curve, figure 27, the drawdown in an observation well 500 feet from a well pumping 1,000 gpm continuously for 100 days will be about 5.2 feet. As shown by the time-drawdown curve, figure 28, the drawdown in an observation well 1,000 feet from a well pumping 1,000 gpm will be 4.5 feet after 100 days of continuous pumping.

Quality of water.—Analyses of water from four wells screened only in the "2,000-foot" sand are given in table 1. Wells screened in this sand yield very soft sodium bicarbonate water, containing small amounts of magnesium and sulfate. The range in total hardness, shown in table 1, is from 4 to 10 ppm and the range in total iron content is 0.03 to 0.13 ppm. The chloride content of this water is low, less than 5 ppm, and the silica content is about 25 ppm, ranging from 23 to 27 ppm, indicating that this water may require

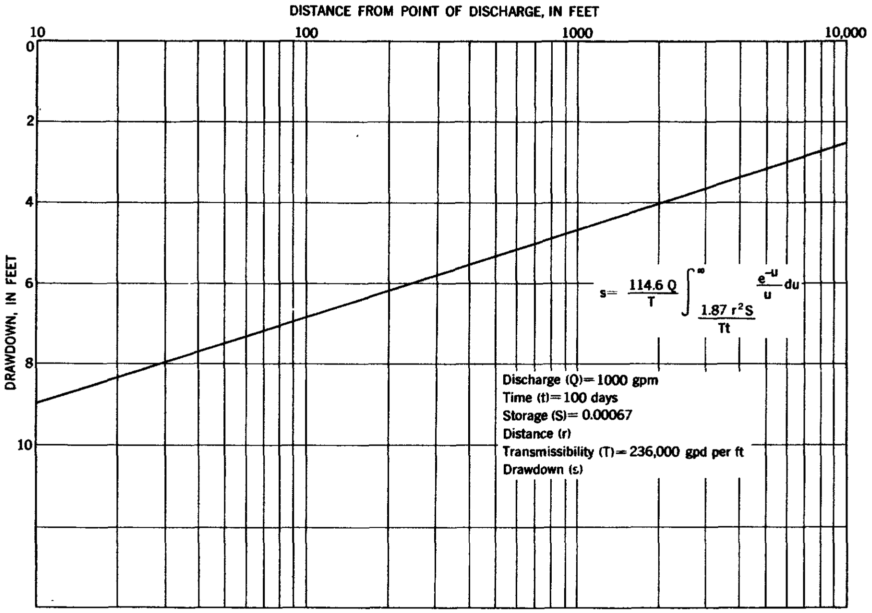

Figure 27.—Theoretical distance-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "2,000-foot sand.

removal of silica before use for some industrial purposes. The water is alkaline, having a pH ranging from 8.2 to 9.0. The temperature of water from wells screened in this sand is about 89° F.

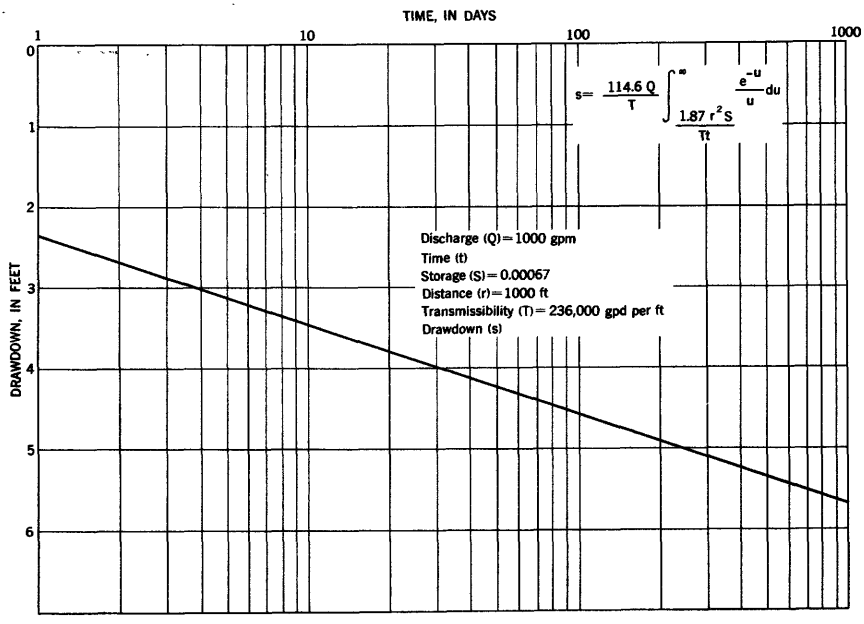

Figure 28.—Theoretical time-drawdown relationship for an infinite aquifer having the hydraulic characteristics determined for the "2,000-foot" sand.

"2,400-FOOT" SAND

Geologic conditions.—The areal extent of the "2,400-foot" sand is similar to that of the "2,000-foot" sand; however, in the northern part of the area the dip of the aquifer is 8 to 10 feet per mile, whereas the "2,000-foot" sand has a lower dip in most of the area. From the industrial district southward to the vicinity of the Louisiana State University the "2,400-foot" sand becomes thinner and the dip increases to about 120 feet per mile. As shown in cross section *A–A'*, plate 1, the aquifer thickens east of the industrial district. To the west the sand appears to be irregular in thickness and at the extreme western part of the cross section it dips abruptly westward and is the deepest water-bearing sand containing fresh water at that locality. In the central part of the industrial district the sand is about 80 feet thick, as shown by the electric log of well EB-534.

The plot from the mechanical analyses shown in figure 29 indicates that the sand is not as uniform in grain size as is the over-

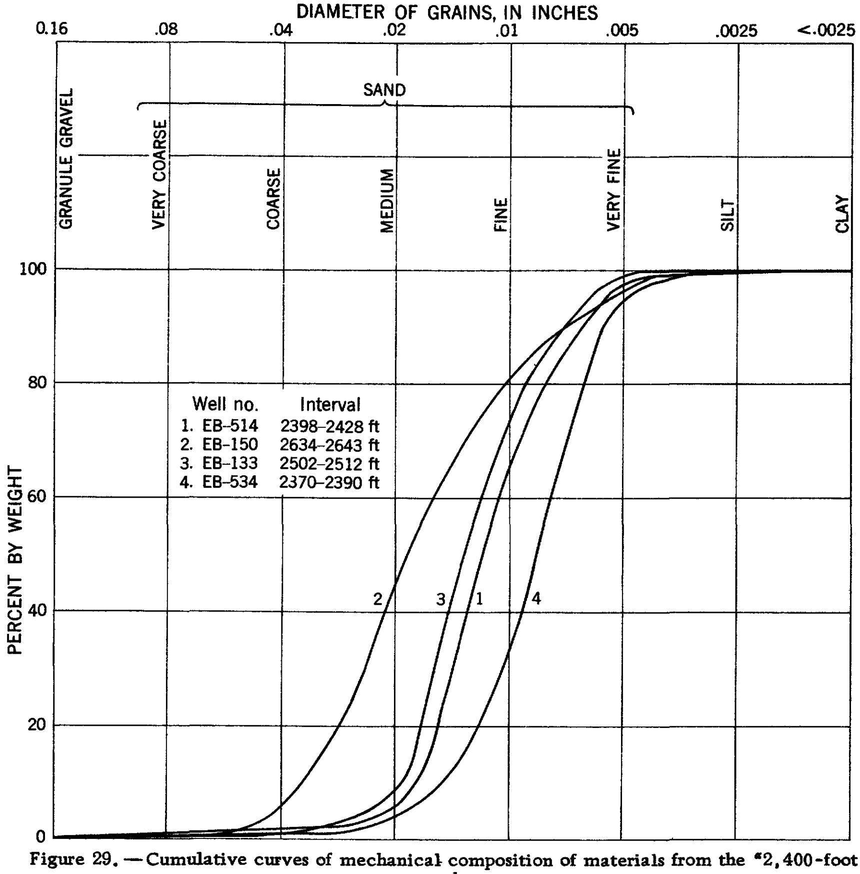

Figure 29.—Cumulative curves of mechanical composition of materials from the "2,400-foot sand.

lying "2,000-foot" sand. The coarse material in these samples is often logged as gravel; however, the bulk of the material is generally medium- to fine-grained sand. As shown in the sample descriptions for wells EB-398 and -534 (table 3), the sand is olive gray to yellowish gray and similar in composition to the overlying sands of Miocene and Pleistocene ages.

Hydrologic properties.—As shown on figure 21 and table 5, 12 wells are screened in the "2,400-foot" sand in the Baton Rouge industrial district. Of this total, 4 are multiple-screened wells obtaining water from the "2,400-foot" and one other sand. Wells were not available for pumping tests and the hydraulic characteristics of this sand were not determined. However, records indicate that the range of the specific capacity of wells screened in this sand is 6 to 16 gpm per foot of drawdown, averaging 10.3 with an average yield of 700 gpm. The recorded yields of wells screened in the "2,400-foot" sand range from 500 to 1,000 gpm.

Quality of water.—Analyses of water collected from wells screened only in this sand indicate that the water is of the sodium bicarbonate type, having a hardness of less than 5 ppm, and contains small amounts of iron (less than 0.1 ppm). The chloride content is less than 5 ppm, and the water is alkaline, having a pH greater than 8.7. The temperature of water from this aquifer is about 91° F.

"2,800-FOOT" SAND

Geologic conditions.—The deepest fresh-water-bearing sand tapped by wells in the Baton Rouge area is the "2,800-foot" sand. The surface of this sand is rather irregular, as shown by the difference in altitude reported in the district from well EB-534 and, about 2 miles to the north, well EB-517. The altitude of the top of the sand at well EB-534 was 2,660 feet below sea level and at well EB-517, 2,420 feet below sea level. Sufficient data are not available to determine accurately the configuration of the top of this sand. The electric logs of wells EB-548 and -550 show the aquifer to consist of an upper and lower sand bed in the central part of the industrial district. However, although the aquifer is irregular and contains clay beds locally, it appears to form a relatively continuous water-bearing formation throughout the area. As shown in plates 1 and 2, the "2,800-foot" sand appears to be thicker east and west of the industrial district than it is to the south and immediately to the north of the district. In the central part of the industrial district the thickness of the upper sand of the aquifer, as shown by an electric log of well EB-534, is about 55 feet. In well EB-550 the thickness of the upper sand bed is about 20 feet and the lower sand about 70 feet. Thus the total thickness of the "2,800-foot" sand is about 90 feet.

Section *B–B'*, plate 2, shows that the "2,800-" and "2,400-foot" sands merge into one hydrologic unit near the northern border of East Baton Rouge Parish where the total thickness of the two units is about 250 feet. The correlation is based on the electric logs of oil-test wells E. B. Young No. 1, and A. R. Annison No. 1 (pl. 2). It is possible, though direct evidence is lacking, that the "2,000-foot" sand merges with these sands to the north of the parish border. If that is so, the fresh-water-bearing sands of Miocene age in the Baton Rouge industrial area have a common area of recharge. The ground-water hydrology seems to support this interpretation as the available data indicate that the non-pumping water levels, before appreciable discharge from wells began, were roughly the same. The present differences in static levels are caused by differences in the amount of water discharged from each sand.

In the Baton Rouge industrial district the "2,800-foot" sand is composed of yellowish-gray poorly sorted sand. The cumulative curve of mechanical composition for a sample from well EB-517 (fig. 30) shows the material to contain a small amount of granule

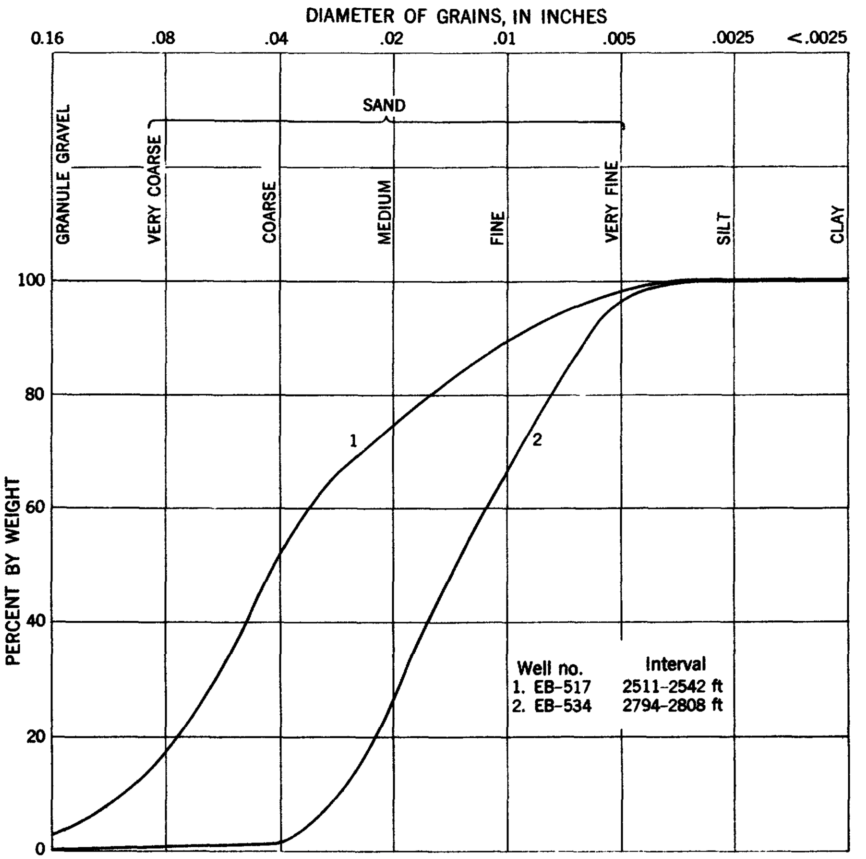

Figure 30.—Cumulative curves of mechanical composition of materials from the "2,800-foot" sand.

gravel but the bulk of the sample consists of coarse to medium sand. The samples from both well EB-517 and well EB-534 showed a wide range of grain size.

Hydrologic properties.—At present only three wells are screened in the "2,800-foot" sand in the Baton Rouge industrial district. None of these wells tap the overlying sands of Miocene or Pleistocene age. The records for two of these wells indicate that the specific capacity is 10 and 18.5 gpm per foot of drawdown at yields of 934 and 1,550 gpm, respectively. At present (1953) the wells screened in this sand flow with a hydrostatic pressure of about 75 feet above the land surface.

Quality of water.—Chemical analyses made of water collected from one well screened in the upper part of the "2,800-foot" sand indicates that the water is of the sodium bicarbonate type and has a silica content of about 25 ppm. The water is soft, having a hardness of only 4 ppm, and has a small quantity of iron in solution (about 0.01 ppm). The chloride content of water from the upper sand is 24 ppm. The water in the lower sand, as shown by an electric log of well EB-550, grades from fresh to salty with depth. Well EB-548 is screened in both the upper and lower sands of the aquifer and after being pumped for a period of 3 months the chloride content of the water is reported to have increased from 120 to 480 ppm. Although the chloride content of water from the upper sand is higher than that reported for wells screened in other sands in the Baton Rouge industrial district, it does not necessarily indicate salt-water contamination of this sand. It is possible that the clay bed between the upper and lower sand is an effective barrier to the migration of salt water. Continued observation of the chloride content of water from wells screened in the "2,800-foot" sand would be advisable, and at least until additional data are available, wells in the sand should be widely spaced to avoid excessive drawdowns. The reported temperature of water from the "2,800-foot" sand is 96° F.

OCCURRENCE OF GROUND WATER

GENERAL PRINCIPLES

Water reaches the porous sand and gravel underlying the Baton Rouge industrial district after first entering the water-bearing material, or aquifer, where it is exposed at the surface or is incised by streams. In the outcrop area, where the sands are not overlain by impervious material and water may percolate directly from the surface downward to the water table, ground water is said to occur under water-table conditions. As the water migrates slowly downdip through the aquifer, it passes beneath relatively impermeable confining beds of clay and becomes confined under hydrostatic or artesian pressure. In such areas, the ground water is said to occur under artesian conditions. In the Baton Rouge industrial district all principal aquifers at present contain water under varying amounts of artesian pressure; that is, static (nonpumping) water levels in all sands rise above the base of the overlying confining beds. The amount of rise is variable. For example, the nonpumping water level in the "400-foot" sand has been drawn down by pumping so that now it is only a few tens of feet above the top of the aquifer, and in some pumped wells the water level probably is being drawn down into the aquifer so that water-table conditions exist immediately adjacent to those wells. At the opposite extreme, little water has been removed from the "2,800-foot" sand, and the static water level is about 75 feet above the land surface. Even in the deposits of Recent age in the lowlands along the Mississippi River the water level rises above the base of the surficial clay and, thus, there is a very local artesian reservoir whose source of recharge is only a few hundred feet from the points of discharge at wells.

One of the great benefits of the deposits of Recent age is the proximity of their recharge area. As a result the water removed from storage may be replenished rapidly. The sands below the deposits of Recent age, however, are at a relatively great distance from their outcrops and so far have functioned mainly as conduits; consequently, most of the water pumped from these aquifers so far has been removed from storage. In the artesian sands the water levels will continue to decline at an ever-decreasing rate as pumping continues at a constant rate, either (1) until the effects of pumping reach the recharge area and induce additional recharge, or decrease the natural discharge, or both, by an amount equivalent to the pumping rate, or (2) until the water levels decline to the point where the pumping must be reduced or stopped.

In an artesian aquifer the lowering of the water level or artesian head does not dewater the sediments of the aquifer unless the water level declines below the base of the confining layer. The water released from storage is derived in part by expansion of the water itself and the compaction of the slightly compressible and elastic aquifer and adjacent confining beds. Hence, with the exception of the "400-foot" sand in which pumping levels in some wells are below the top of the aquifer, the sands underlying the Baton Rouge area are fully saturated and contain about the same amount of water as under original natural conditions prior to development.

WITHDRAWALS AND THEIR EFFECT

GENERAL CONDITIONS

In the Baton Rouge area discharge of ground water from the main fresh-water-bearing sands occurs in two ways: by natural means and by withdrawal from wells, including the discharge from uncapped flowing wells. Before industrial development of the area and the introduction of large-capacity pumps at the turn of the century, essentially all discharge occurred by natural processes. Since that time, pumping from wells has increased steadily until, in recent years, it has constituted nearly 100 percent of the total discharge of ground water that enters the area. That is, the original southward movement of water has been stopped and water moves toward the pumped area from all directions. Most of the present natural discharge occurs in the outcrop area where ground water is discharged from overflowing aquifers through springs and seepage into streams ("rejected recharge"), and through evapotranspiration near the streams. Initially ground water was discharged naturally from the artesian aquifers by seepage upward through the confining beds into progressively shallower aquifers and finally into the atmosphere or into streams. The rate of this discharge depended primarily on the differences in hydrostatic head between the artesian aquifers and the water table in the overlying sediments, and on the permeability and thickness of the confining beds through which the water passed. In those parts of the area where pumping has lowered the hydrostatic pressure in the artesian aquifer below the altitude of the water table, there can be no natural discharge upward; instead, water in the surficial deposits may be moving downward (Bennett and Meyer, 1952, p. 77).

PUMPAGE

The first recorded well in the area was a drilled public-supply well constructed in 1892 and screened between depths of 690 and 758 feet (Harris, 1905, p. 46). This well had a reported water level of 6 feet below the surface and a daily yield of 500, 000 gallons. Pumping for industrial purposes started in 1914 when Baton Rouge became the oil-refining center of southern Louisiana, and the first industrial wells were drilled to a depth of about 450 feet and developed in the "400-foot" sand. The locations of these wells, EB-1, EB-2, and EB-3, are shown on figure 13 and the construction data are given in table 5. The original reported static water level in these wells was 44 feet below the surface and their yields ranged from 550 to 1, 600 gpm. In 1910, one well (EB-40) was drilled to a depth of about 1, 300 feet to provide water for construction purposes and was screened in the "1, 200-foot" sand. This well had an original reported static water level of 42 feet above the land surface and an artesian flow of 80 gpm.

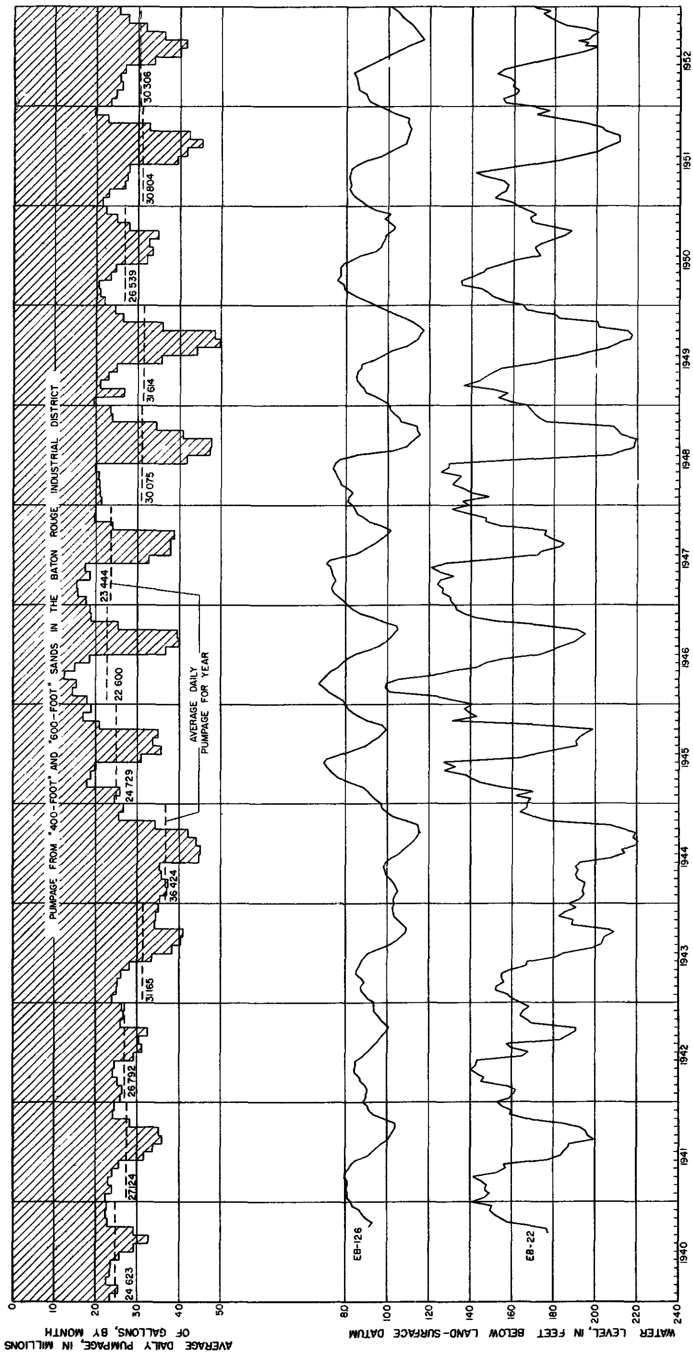

Figure 31. —Graph showing the relation of pumpage to water levels in wells screened in the "400-foot" and "600-foot" sands in the Baton Rouge industrial district.

Few records of pumpage are available for most of the period prior to the year 1940; however, an approximation of the pumpage can be made by evaluating the number of wells, their yield, and their time of construction. It is estimated that the pumpage increased gradually from about 2 mgd in 1900 to about 10 mgd in 1920. After that time the pumpage increased gradually to about 12 mgd until, due to rapid industrial growth beginning about 1936, it was increased to approximately its present (1953) rate of about 65 mgd for public supply and industrial purposes. Since 1936, withdrawals have fluctuated with economic and other conditions. A graphic illustration of this condition for the past decade is shown in figure 31. This figure shows the relationship of water levels to pumping for wells screened in the "400-" and "600-foot" sands, which provide about 45 percent of the ground water used in the Baton Rouge area. As shown by this graph, the maximum daily withdrawal occurred in 1944 when there was a daily demand of about 36 million gallons from wells in these 2 sands. At the end of World War II, the daily demand decreased for 2 years, 1945 and 1946, to about 23 million gallons. Since that time, the daily withdrawals have increased to and averaged about 30 million gallons. At present 44 large-diameter wells screened in the "400-" and "600-foot" sands are reported to be in use. About half are screened in both sands, and examination of figure 31 indicates the similarity in the effects of pumping from these sands on water levels in a well (EB-128) screened only in one sand ("600-foot") and on another well (EB-22), screened in both sands. The amplitude of the water-level fluctuation in an observation well depends upon the nearness of the well to the center of heavy pumping; this is shown by well EB-128 on South 16th Street and North Boulevard, about 2 miles southeast of the center of heaviest pumping, and by well EB-22, in the center of the area of heavy pumping.

The average daily pumpage for industrial and public-supply purposes from sands below a depth of 600 feet is estimated to be 33,000,000 gallons. In some sections of the Baton Rouge industrial district the pumping has resulted in a gradual decline in water levels, depending upon well spacing and the particular sand's hydraulic characteristics. Figure 21 shows the location and distribution of the wells screened in these deeper sands in the Baton Rouge industrial district. Unfortunately, wells for observation purposes screened in all known fresh-water sands were not available, and it was not possible to keep an accurate or continuous record of water-level fluctuations. However, records of existing supply wells indicate that there are two or more large-diameter supply wells screened in each of the known fresh-water sands between the depths of 600 and about 2,900 feet. Following is the daily average pumpage estimated for each sand:

Sand	*Gallons per day*	*Sand*	*Gallons per day*
"800-foot"	1,476,000	"1,700-foot"	1,400,000
"1,000-foot"	1,718,000	"2,000-foot"	14,600,000
"1,200-foot"	2,500,000	"2,400-foot"	5,500,000
"1,500-foot"	5,000,000	"2,800-foot"	1,000,000

As nearly as can be determined, the population of the outlying towns and areas within the Baton Rouge area was about 10,000 in 1950 according to the Bureau of the Census. The quantity of ground water used in these areas is based on an estimated per-capita use of 125 gpd. This quantity allows for gardening, for use by small business establishments in the smaller towns, and similar applications. Thus, the daily quantity pumped for the rural population is estimated to be about 1,250,000 gallons. In the so-called Baton Rouge industrial district, because of the location of large industries and the density of the population, there is little farming and few cattle or stock ranches. Thus, the total withdrawal for agricultural and stock uses is a relatively small amount and will not affect appreciably the estimated total withdrawal from the principal sands. Accordingly, more refined estimates of pumpage for minor uses are not considered justifiable for inclusion in this report.

The total quantity of ground water pumped in the Baton Rouge industrial area may be considered to be permanently removed from storage. Most of the water used for industrial purposes is expended in processing operations, or disposed of as waste, or both. As indicated in the section on Recent deposits, a small quantity of this ground water disposed of as waste into the Mississippi River may again enter these deposits through influent seepage, and be reused, but that is a matter of academic interest rather than of practical importance. At present there is no recharge of the fresh-water-bearing sands by artificial means in the Baton Rouge industrial district. Water used for public supply, agriculture, and rural purposes, also is either lost by transpiration and evapotranspiration or is disposed of as waste into nearby streams.

EFFECTS OF PUMPING

Although the water levels in wells fluctuate from many different causes, the pumping of ground water in the Baton Rouge industrial district has been the principal factor in the fluctuations of artesian head in the water-bearing formations in this locality.

Because the "400-" and "600-foot" sands are considered generally as one supply unit, it is impractical to divide the reported pumpage into amounts withdrawn from each aquifer. Water obtained from wells screened in these sands is low in temperature and is chemically satisfactory for most industrial uses; consequently, about 45 percent of the ground water used in the Baton Rouge industrial district has been developed from these sands.

As a result of heavy pumping, averaging about 19,700 gpm, from wells screened in the "400-" and "600-foot" sands within a small area of the industrial district (radius about 3,500 feet), the static water levels in wells in these sands have declined from about 6 feet below the surface in 1892 to an average to about 180 feet in 1952. The pumping of water from this "supply unit" is seasonal. During the summer and early fall months when the temperature of the river water is high, more ground water is pumped than during the late fall, winter, and spring months when considerable river water is used and there is a partial recovery of ground-water levels.

From an analysis of the observed water-level fluctuations caused by pumping in the 12-year period 1941–52, and reported water levels for the period 1914–41, a theoretical drawdown curve (fig. 32) was prepared. A yearly average water level was determined from observed data for the period 1941–52 and plotted on linear paper in order to determine the effects of the increase in pumping 7,000 to 19,700 gpm that took place in 1936. The increase in drawdown for each year resulting from this increase in pumping was determined and replotted on semilog paper. Based on the assumptions and approximations that (1) the pumpage for this period (1941–52) has been nearly constant, (2) the aquifers are homogeneous, infinite in extent, and without any lateral boundaries, and (3) the total pumpage is from one well in the center of the area, a straight line drawn through the plotted points indicates that in the period 1952–60 there will be a further increase of about 5.5 feet (fig. 33) in the difference between the present static levels and the extrapolated level (dashed line in fig. 32) as it would have been if the pumping had not been increased in 1936. Adding the 5.5 feet to the approximately 8 feet of decline between 1952 and 1960 indicated by the dashed line in figure 26 gives a total of roughly 13 or 14 feet—the expected average decline in water levels in the "400-" and "600-foot" sands from 1952 to 1960 if the pumping rate remains the same.

Another important effect of water-level decline caused by continued withdrawals is the reversal of the direction of ground-water flow, resulting in possible salt-water encroachment.

Water levels in wells screened in either the "400-" or the "600-foot" sand have water levels of the same order of magnitude; however, records indicate that the water levels in wells tapping only the "600-foot" sand are about 150 feet below the land surface, whereas water levels in wells screened only in the "400-foot" sand are about 185 feet below the surface. This difference in head is caused by greater pumping from and lower permeability of the "400-foot" sand.

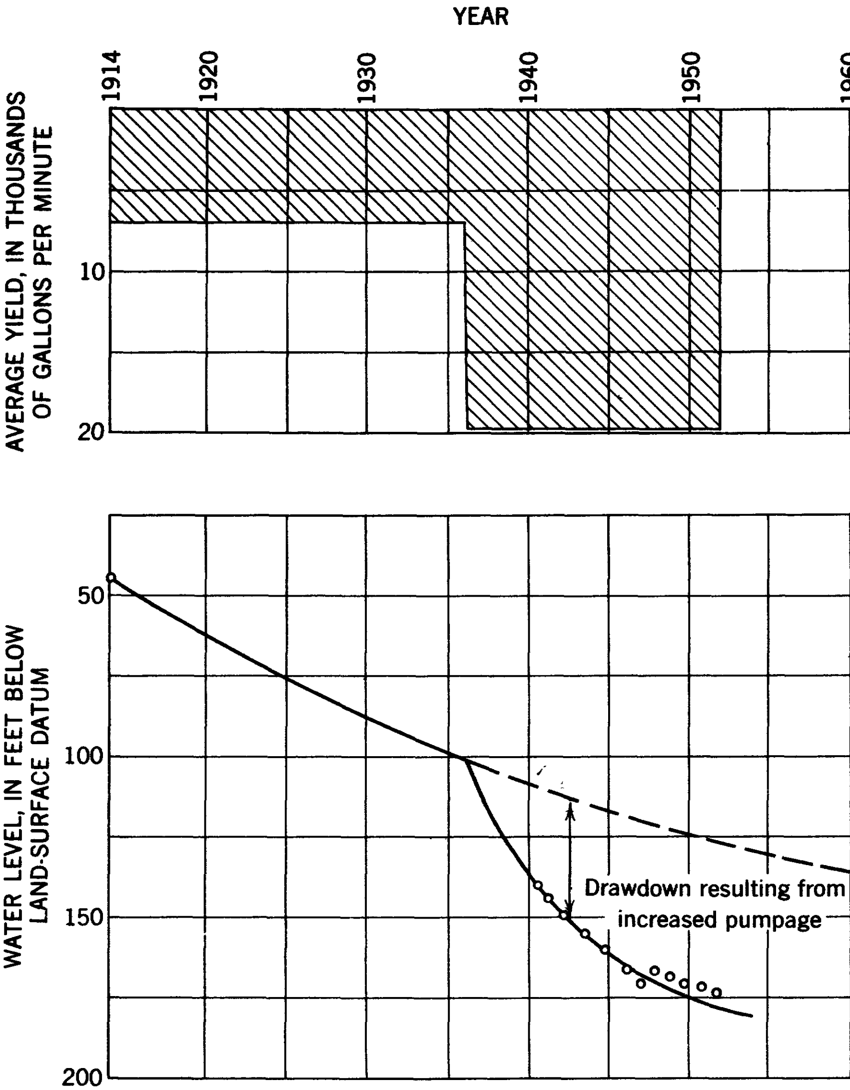

Figure 32.—Water-level decline caused by pumping from wells screened in the "400-foot" and "600-foot" sands.

Until 1936 there was no recorded general decline in water levels in wells screened in the deeper sands (below 600 feet). Most of the water levels shown on the graphs in figure 34 for the period prior to 1942 were reported by well drillers or by well owners; also many of the water levels reported are approximate and are not for the same well. A line was drawn through each plotted point and the resulting graphs indicate the general magnitude of the change in water level. No long-term records of water levels in wells screened in the "1,700-foot", "2,400-foot", and "2,800-foot" sands are available and graphs were not prepared.

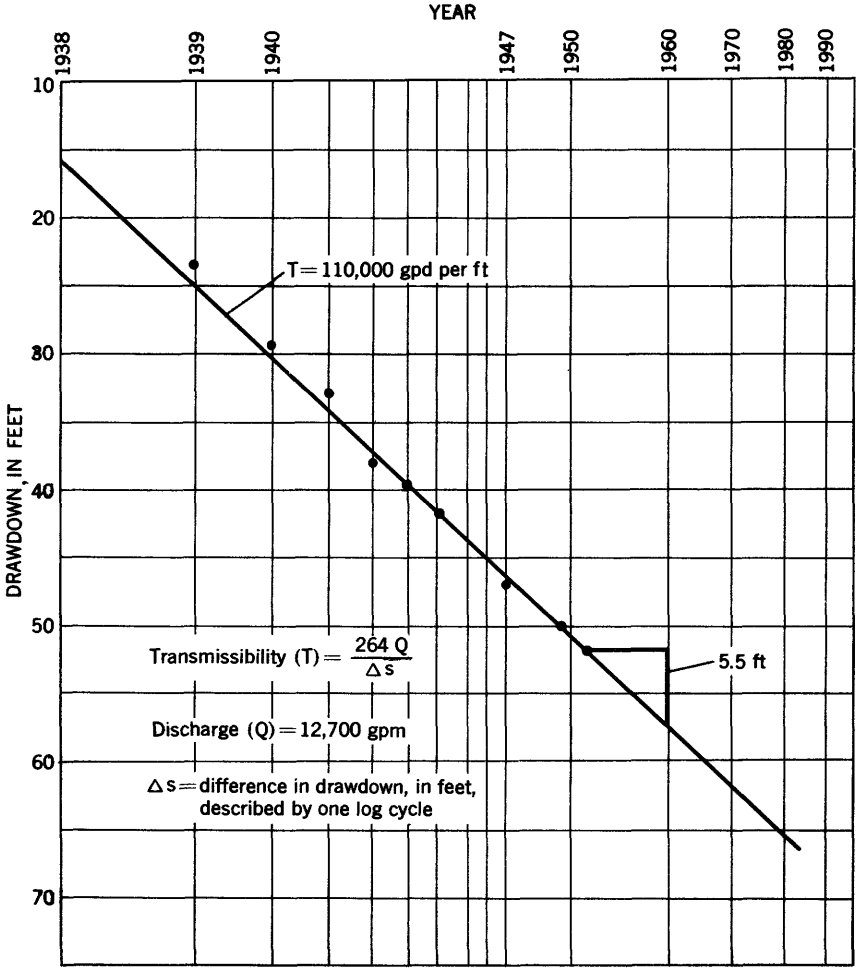

Figure 33.—Time-drawdown curve obtained from plot of water levels in figure 26 showing the coefficient of transmissibility determined and the theoretical future drawdowns in the "400-" and the "600-foot" sands.

The general trend of the water levels in wells screened in the "800-foot", "1,000-foot", "1,200-foot", and "1,500-foot" sands are roughly similar, showing a gradual decline until 1936 followed by a rapid decline. The water levels in the "1,500-foot" sand declined from a level of about 35 feet above the surface in 1939 to the present (1953) level of about 25 feet below the surface. The water levels in wells screened in the "1,000-foot" sand have declined about 45 feet from a water level of about 25 feet above the surface in 1921. The water level reported in 1916 for wells in the "1,200-foot" sand was about 40 feet above the surface and since that time there has been a decline to the present level of about 20 feet below the surface. However, the most pronounced decline occurred during the period 1945–52, from 20 feet above the surface to 20 feet below, or a total decline of 40 feet, in 8 years. In a period of

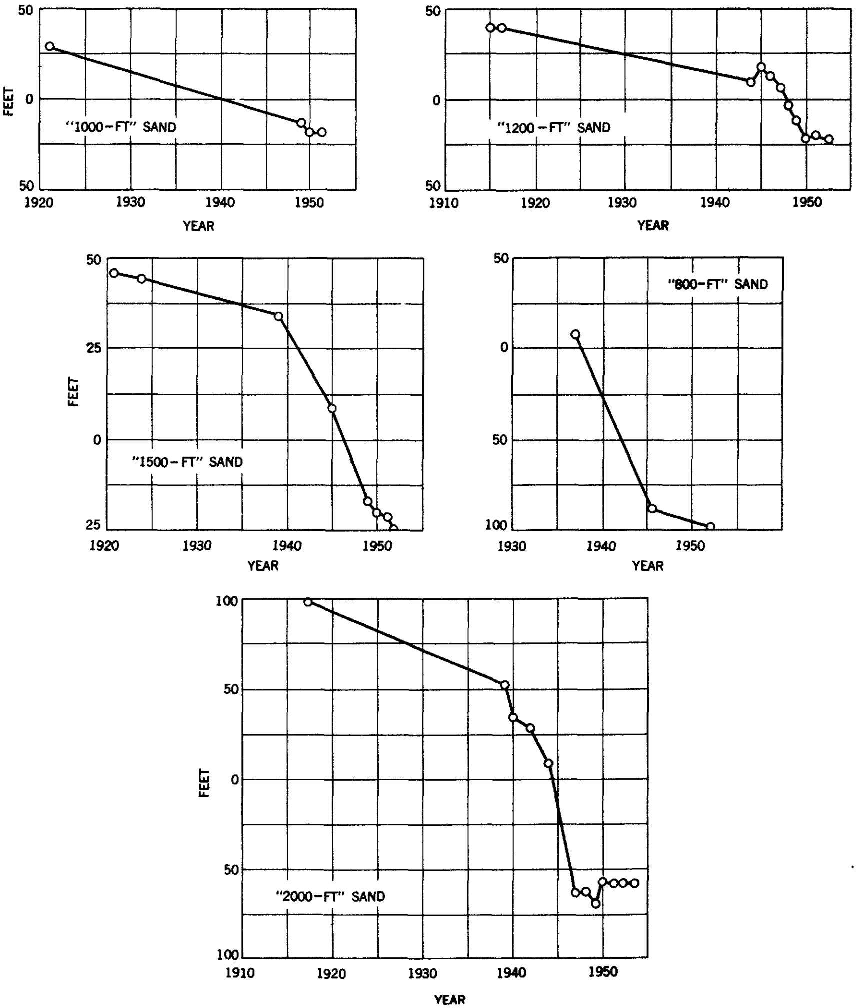

Figure 34.—Graphs showing the general decline in artesian head, in feet, with reference to land-surface datum.

about 15 years (1937–52) the water levels in wells screened in the "800-foot" sand declined about 110 feet to the present level of about 100 feet below the land surface. The "2,000-foot" sand is a major source of ground water in the Baton Rouge industrial area and for the period 1916–36 there was a gradual decline in artesian head from about 100 feet above the surface to about 50 feet above the surface. After 1936 the water level declined more rapidly, reaching a level of about 65 feet below the surface in 1949; after 1949, the pumpage from wells from this sand was more or less constant and the level has remained about 55 feet below the land surface. Water-level records for well EB-294, screened in the "2,400-foot" sand, indicate a decline of 135 feet in 10 years in the northern part of the industrial district. In 1942 the reported water level was 58 feet above the land surface; whereas the static level was measured at 77 feet below the land surface in the summer of

1952. The magnitude of this decline has probably been affected considerably by pumping from closely spaced wells near well EB-294.

The water-level fluctuations in well EB-312, which is at Evangeline Street and Wildwood Parkway, represents water-level conditions in the "1,500-foot" sand for the period 1944–52. (See fig. 35.) The static water level in this well, which was about 15 feet above the land surface in 1944, has declined to about 25 feet below the land surface in 1952, representing a net decline of 40 feet. During a year the range in fluctuation is about 12 feet, owing to changes in the rate of pumping. Well EB-315 at Zion City, about 3 miles northeast of the center of heavy pumping, is screened in the "2,000-foot" sand. Records for this well show a net decline of about 30 feet during the period 1944–52, reaching a maximum low of about 22 feet below the surface during the early fall months of 1952. (See fig. 35.)

HYDRAULIC CHARACTERISTICS

As stated previously, tests were made on a number of wells in the Baton Rouge industrial district in order to determine the transmissibility (ability to transmit water) of the various water-bearing sands penetrated by the wells. The wells selected for pumping tests were those for which the necessary water-level and discharge measurements could be made.

Two of the fundamental properties of a water-bearing material with respect to its ability to yield water to wells are its permeability and storage capacity. Permeability may be defined as the volume of flow per unit time through a unit cross-sectional area of the material under unit hydraulic gradient, at a standard temperature (60° F in the Geological Survey). For field use permeability may be expressed as the number of gallons of water per day that will flow through each mile of the water-bearing bed (measured at right angles to the direction of flow) for each foot of thickness of the bed and each foot per mile of hydraulic gradient at the prevailing temperature of the ground water.

The product of the permeability and the thickness (in feet) of the water-bearing bed is termed the coefficient of transmissibility ($T=mP$). The coefficient of transmissibility of an aquifer may be expressed as the rate of flow, in gallons per day, through each mile of water-bearing bed (measured at right angles to the direction of flow) for each foot per mile of hydraulic gradient, at the prevailing temperature of the ground water.

The storage capacity of an aquifer is expressed by its coefficient of storage, which is defined as the unit volume of water released

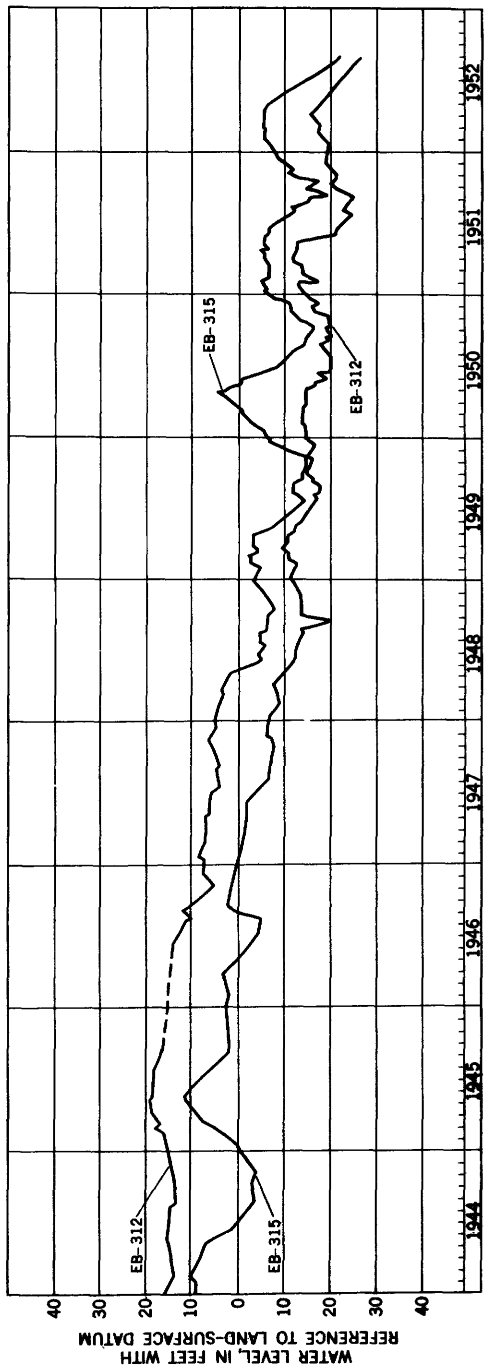

Figure 35. —Graphs showing the water-level fluctuations in wells screened in the "1,500-" and the "2,000-foot" sands at Baton Rouge, La.

from storage in a vertical prism of the aquifer of unit cross section as a result of unit decline head.

For field use the coefficient of storage may be expressed as the amount of water, in cubic feet, released from storage from each vertical prism of the aquifer with the cross-sectional area of 1 square foot as the head declines 1 foot. Under water-table conditions the coefficient of storage approximates the specific yield, which may be expressed as the ratio of (1) the volume of water that the material will yield by gravity, after being saturated, to (2) the volume of the material.

The nonequilibrium formula, as first developed under the direction of C. V. Theis (1935) of the U. S. Geological Survey, is the basis for the computation of the transmissibility and storage coefficients in this report. The formula is:

$$s = \frac{114.6\,Q}{T} \int_{\frac{1.87r^2S}{Tt}}^{\infty} \frac{e^{-u}}{u}\,du$$

in which s = the drawdown (or recovery) of the water level, in feet, at any distance in the vicinity of a well pumped at a uniform rate;

Q = the discharge of the well, in gallons per minute;

T = the coefficient of transmissibility of the aquifer, in gallons per day per foot;

r = the distance, in feet, from the pumped well to the point of observation;

S = the coefficient of storage of the aquifer

and t = the time, in days, that the well has been pumped, or, for recovery, the time in days since it was shut off.

The nonequilibrium formula assumes that the aquifer is infinite in extent, that it has the same transmissibility at all places and in all directions, that it is confined between impermeable beds above and below, and that there are no lateral boundaries. The formula further assumes that the coefficient of storage is constant, that the water is released from storage instantaneously with a decline in artesian head, and that the well taps the entire thickness of the aquifer.

Through the use of this formula, developed for ground-water work under the direction of Mr. Theis and further modified by Wenzel (1942), Cooper and Jacob (1946), and others, the transmissibility and storage coefficients of an aquifer can be determined by means of pumping tests and can be used to predict the effect of pumping a given quantity of water for any given period at any distance from the pumped well. The formula can be used also to determine the quantity of water that can be pumped from a given well or wells with specified drawdowns at the wells. It is evident, therefore, that adequate pumping tests permit making quantitative estimates of the water supply of an aquifer that approaches the requirements stipulated in the formula. Graphs showing the effects of pumping from aquifers having hydraulic characteristics determined from pumping tests in the Baton Rouge industrial district are included in the section on "Geologic formations and their water-bearing properties."

In order to determine the coefficient of storage by pumping-test methods it is generally necessary to have at least one observation well in addition to the pumped well. The transmissibility can be determined from measurements made in one or more observation wells or in the pumped well itself it other wells are not available.

Table 4 gives the coefficients of transmissibility (*T*) and storage (*S*) obtained by application of the nonequilibrium formula and recovery method, as described by Wenzel (1942, p. 87, 95), to data obtained from pumping tests. Along with these results, the table also shows the test-well number and its owner, the aquifer tested, the effective thickness of the aquifer, the duration of the test, the calculated field coefficients of transmissibility and permeability, and methods used in the calculation. The locations of the wells are shown on figures 13 and 21. The number of tests made on each aquifer was limited by the number of suitable wells available, the extent to which pumping could be controlled, and the time limit established for the preparation of this report. Owing to these limitations, tests were not made to determine the hydraulic characteristics of the "1,500-foot", "2,400-foot", and "2,800-foot" sands. It would be desirable, in the future, to make such tests to determine the transmissibility and storage coefficients. Several tests should be made for each aquifer to determine the areal changes of these coefficients in order to predict the effects of pumping. For the same reason it would be desirable to make additional tests of the aquifers listed in table 4.

Pumping tests (except for the one made in wells screened in the Recent deposits) were made during the months of January, February, and March, 1953, a period when there is a decrease in withdrawals from wells and when, therefore, most water users are in the best position to control their pumping without jeopardizing their regular operations. Even with excellent cooperation from each well owner who exerted every effort to maintain constant pumping from wells screened in the sand tested, there were a number of other factors which influenced the length and accuracy of each test. In a number of instances when there were mechanical failures of the pumping apparatus on wells screened in sands other than the one being tested, it was necessary to resume pumping from wells in the sand under test, thus reducing the length of the test. In a number of tests the variation in discharge-line pressure caused substantial changes in the quantity of water being pumped and necessitated shortening the tests.

Measurements of the quantity discharged were made by means of an orifice plate or a pitot tube installed in the discharge line. Water-level measurements were made with an electrode receiving its current from a dry-cell battery, completion of the contact with the water level being noted on a milliammeter. Before each test, water-level measurements were made to determine the residual effect of previous pumping for use in correcting observed water-level data. Because of the shortness of the tests no corrections were made for diurnal fluctuations and the loading effect of the Mississippi River upon the aquifers.

Owing to the test-time limitations also, no effects of hydrologic boundaries, either barrier or recharge, were shown by the curves. However, detailed pumping tests outside the area of heavy ground-water pumping over a long period of time may indicate the presence of such boundaries and thus may supplement the available geologic information.

The storage coefficients, as determined, indicate that all the aquifers of Pleistocene age or older are under artesian conditions.

The clay in the upper part of the Recent alluvium acts as a confining bed, producing artesian conditions in that aquifer also. However, as shown in table 4, the values of the coefficient of storage are larger than those in the deeper aquifers, indicating that outcrops of the water-bearing sand and gravel lie at no great distances from the wells tested.

To determine the coefficients of storage and transmissibility the corrected drawdown or recovery values were plotted on log-log paper against time and computations were made using Theis' nonequilibrium formula (Wenzel, 1942, p. 87). A typical plot of observed drawdown data plotted against time on log-log paper for an observation well in the "400-foot" sand is shown in figure 36. The recovery method (Jacob and Cooper, 1946, p. 526) was used to determine the transmissibility by plotting on semilog paper the water level in the pumped well against the ratio of time since pumping started to the time since pumping stopped.

Sands of Recent age.—The coefficients of transmissibility, storage, and permeability of the sands of Recent age, computed from data supplied by the Esso Standard Oil Co., indicate that the sands are quite permeable, but are not as permeable as the "2,000-foot" sand (see following paragraphs). The range of the transmissi-

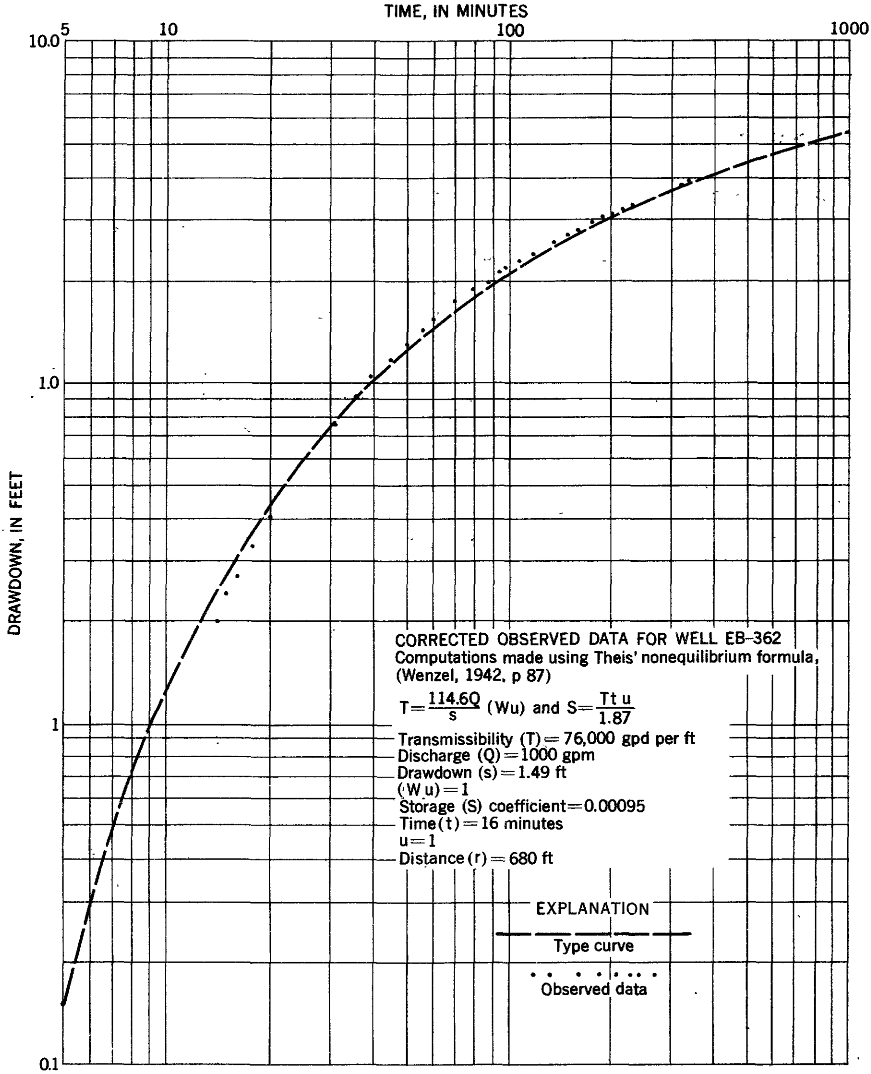

Figure 36. —Graph of results obtained from pumping test made in wells screened in the "400-foot" sand in the Baton Rouge industrial district.

bility, 140,000 to 210,000 gpd per foot, is caused by geologic and hydrologic boundary conditions as discussed in the section on "Geological formations and their water-bearing properties."

"400-foot" sand.—The values for transmissibility obtained from tests on wells in the "400-foot" sand range from 32,000 to 77,000 gpd per foot, depending upon the location of the test area in relation to centers of pumping and upon the local thickness of the aquifer. Because pumping from wells in the "400-foot" sand is relatively light in the immediate vicinity of wells EB-360 and -362, it is reasonable to assume that the transmissibilities calculated for these wells approach a true value, as the observed data

would be less likely to be affected by unobserved erratic fluctuations of water levels due to variations in pumping from other wells screened in this sand. However, some consideration must be given to results obtained for other wells in the areas of heavy pumping, and in order to have a representative figure of transmissibility for the "400-foot" sand in the Baton Rouge industrial district a weighted average transmissibility of 51,000 gpd per foot was computed from all determinations.

"600-foot" sand.—Five determinations of transmissibility were made of the "600-foot" sand from one test (recovery and drawdown phases) made in the industrial district. The observation wells were located at different distances and in different directions from the pumped well (EB-473), which had an average discharge rate of 1,300 gpm. The coefficients of transmissibility determined for the "600-foot" sand range from 95,000 to 123,000 gpd per foot. Inasmuch as the "400-" and "600-foot" sands are roughly comparable in thickness, the permeability of the "600-foot" sand must be higher. The higher transmissibility, greater depth, and—at present—higher water level of the "600-foot" sand mean that it has a greater potentiality for additional development than does the "400-foot" sand, in which pumping water levels already are below the top of the confining bed locally. The temperature of the water from the "600-foot" sand is only a little higher than that of water from the "400-foot" sand and is lower than that from the deeper sands.

Because many of the wells in the Baton Rouge industrial district are screened in both the "400-" and the "600-foot" sands an effort was made to determine the transmissibility of the combined sands in order to predict the future effects of continuous pumping at the present rate. From a history of water-level records and an estimate of pumpage for the period from 1914 to the present, graphs, figures 32 and 33, were prepared. The coefficient of transmissibility obtained from these data is 110,000 gpd per foot and compares well with the 125,000 gpd per foot computed by Cushing and Jones (1945, p. 30).

"800-foot" sand.—The transmissibility determined for the "800-foot" sand was made from one recovery test in a well located in the southern part of the Baton Rouge industrial district. It is likely that the results of this test may be affected by the pumping from a well nearby screened in the same sand. Also, as shown by the geologic cross section of the area (pl. 2), the sand thins or pinches out to both the north and the south; the resulting boundary effects would make the effective transmissibility less than the computed value of 24,000 gpd per foot.

"1,200-foot" sand.—Because of the great distance (3,000 feet) between wells available for pumping tests, interference tests were unsuccessful on wells screened in the "1,200-foot" sand. However,

the results from two recovery tests show the transmissibility to lie between 79,000 and 126,000 gpd per foot. This variation was probably caused by a number of unknown factors, and it would be desirable when other wells are developed in this sand to make detailed tests to determine the transmissibility more accurately and to determine the storage coefficient of the "1,200-foot" sand.

"1,700-foot" sand.—The transmissibility computed from one recovery test made in well EB-68, screened in the "1,700-foot" sand, was 32,000 gpd per foot. Owing to the necessity of resuming pumping from this well, the period of this test was limited to only 270 minutes and, as no other wells screened in this sand were available for observation purposes, a coefficient of storage could not be determined.

"2,000-foot" sand.—The results of a pumping test made on wells in the "2,000-foot" sand and available geologic information indicate that this sand is a potential source of large quantities of ground water. The computed transmissibilities ranged from 209,000 to 289,000 gpd per foot. The graphs in figure 37 show the drawdown and recovery curves plotted from measurements made in wells EB-70 and -71 as affected by a change in pumpage in well EB-72. The observed data form normal curves for both the drawdown and the recovery and it is reasonable to assume that the hydraulic characteristics calculated from this test are close to the actual values for the "2,000-foot" sand in this area.

Use of pumping-test data.—The primary purpose of a pumping test is to measure the hydraulic characteristics of an aquifer for use in determining the effects of pumping from a well field, or from an individual well, at various times and distances. When a well is pumped the head declines not at a linear but at a logarithmic rate as shown by figure 38. In this figure it is assumed that the coefficient of transmissibility is 100,000 gpd and the storage coefficient is 0.001; thus, the theoretical drawdown at a distance of 1 foot from a pumped well at the end of 1 day of continuous pumping is 76 percent of the total drawdown at the end of 1,000 days of pumping. The drawdown at 10 days is 80 percent and at 100 days is 90 percent of the total assumed drawdown at the end of 1,000 days. This graph shows clearly that the large part of the total drawdown in a pumped well occurs within a few weeks after pumping starts. The drawdown within an area comparable to that of the Baton Rouge industrial district will be at approximately the same percentage rate.

The coefficients of transmissibility of all the sands in the Baton Rouge area, as determined in the pumping tests, range from 32,000 to 289,000 gpd per foot. Using an artesian coefficient of storage of 0.001 and using coefficients of transmissibility ranging from 25,000 to 300,000, a series of curves were prepared in figure 39 to show the theoretical drawdown in aquifers of

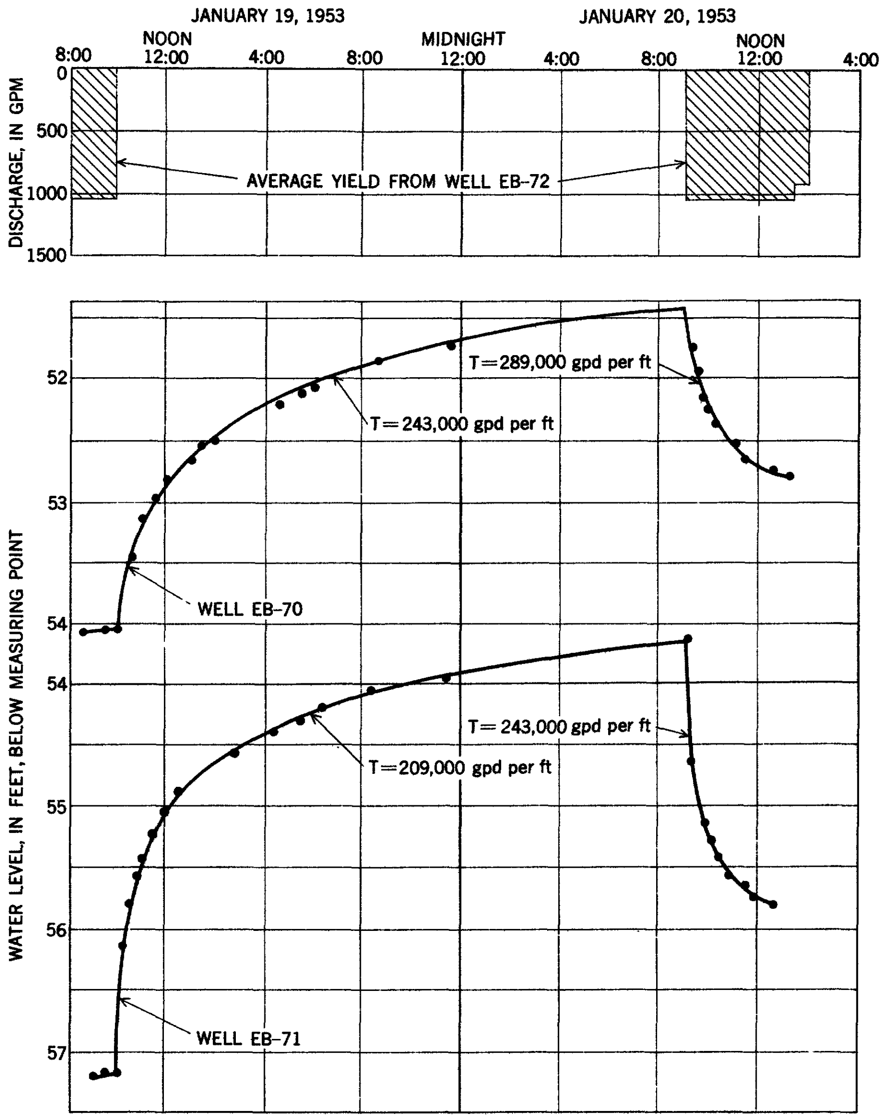

Figure 37. —Results of pumping test made on wells screened in the "2,000-foot" sand in the Baton Rouge industrial district.

different transmissibilities at distances of 1 to 10,000 feet after pumping at the rate of 1,000,000 gpd for 1 year. The graph serves only as a guide in evaluating the general order of magnitude of decline in water levels that would occur with a decrease or increase in pumping. The theoretical drawdown is directly proportional to the pumpage. Hence, if the pumping rate is 500,000 gpd, the drawdown would be half that shown in figure 39. The drawdown given for a distance of 1 foot from the pumped well should not be considered to represent the drawdown in the pumped well, for the efficiency of the well—the loss in head due to friction in the well

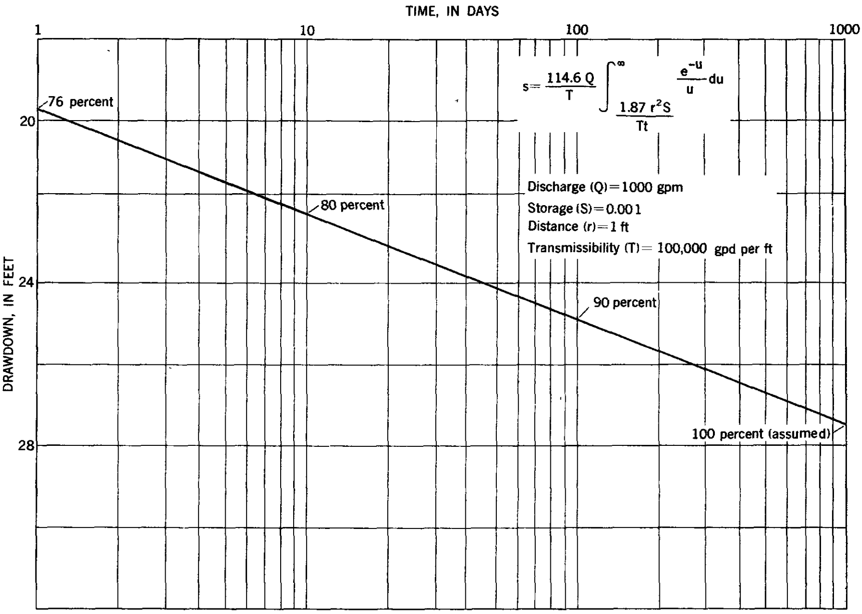

Figure 38. —Graph showing the theoretical increase in drawdown in an infinite aquifer with increase in time.

source and other factors—has a considerable effect on the drawdown in the pumped well.

QUALITY OF WATER

The quality of ground water is determined chiefly by the type of rock with which it has been in contact. All minerals are soluble in water to some extent and, as the movement of ground water is very slow, there is adequate time for the water to become mineralized. The quality of water within the same aquifer may change considerably as water comes in contact with different minerals. For example, as the water moves downdip from the outcrop area north of the Baton Rouge area there is a natural softening of the water. This natural softening is the result of base exchange—the exchange of calcium and magnesium ions in the incoming water for sodium and potassium ions in the aquifer. In general, the uncontaminated ground waters from the aquifers of Pleistocene and Miocene ages in the Baton Rouge area are very soft and have a low mineral content.

The approximately constant quality and temperature of ground water from the Pleistocene and Miocene aquifers cause it to be in demand for most industrial purposes. Owing to the low mineral content, little treatment is required for its use for either industrial purposes or public supply. Thus, the quality of the ground water greatly enhances the value of this natural resource.

The chemical analyses shown in table 1 were selected from 175 analyses of ground water from the Baton Rouge area. They were

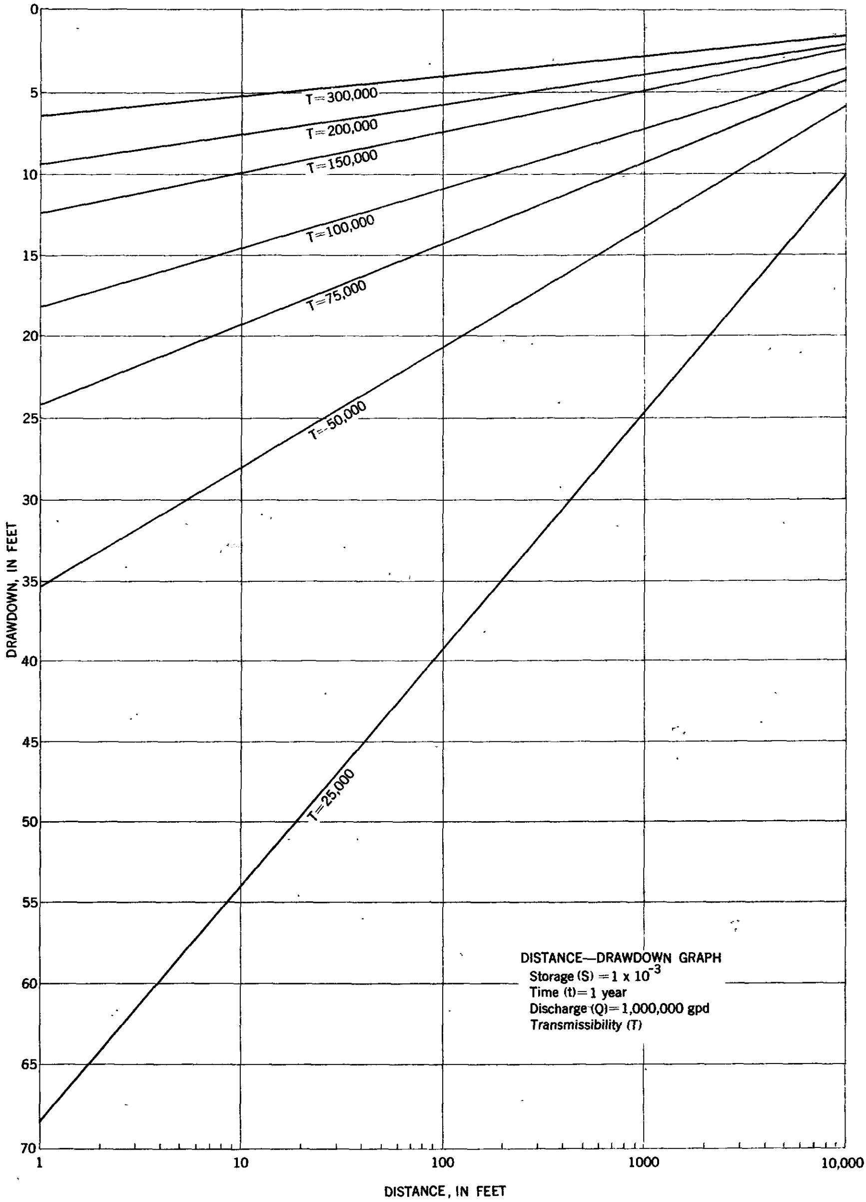

Figure 39. —Graph showing the theoretical drawdown in an infinite aquifer for different coefficients of transmissibility.

selected to show the range in constituents and the general type of water available from each aquifer. The analyses show that some constituents differ in amount from well to well.

The quality of water in the Recent deposits is strikingly different from that of water in the underlying sands of Pleistocene and Miocene ages. The water is hard and generally contains objectionable quantities of iron in solution. The Recent deposits are locally recharged by water from the Mississippi River, as previously discussed, and consequently the quality of water changes as water is removed from storage within the aquifer and is replenished by water from the river. During 1949 and 1950 well EB-501 was pumped continuously and the most notable change in quality of water was the decline in concentration of iron from 18 ppm to 6 or 7 ppm as shown in table 2. During this period of pumping the hardness also declined from about 270 ppm to about 140 ppm. With continued pumping the change in the quality of water from the Recent deposits would be at a progressively slower rate until the water pumped from the aquifer would be only slightly more mineralized than that from the river.

With the exception of water from the "2,800-foot" sand, the uncontaminated waters from all sands of Pleistocene and Miocene ages are very similar in chemical composition. They are soft sodium bicarbonate waters with a dissolved-solids content of approximately 200 ppm. The analyses shown for wells EB-129 and -493 in the "600-foot" sand indicate that the water from these wells is contaminated by salt water; consequently, their content of sodium, chloride, and dissolved solids is much higher than the average for uncontaminated waters. (See table 1.) The water from the upper part of the "2,800-foot" sand has a higher chloride, sodium, and bicarbonate content than is normally found in water from the overlying sands; however, the water contains very small quantities of the other principal chemical constituents. Salty water (greater than 250 ppm chloride) is present at the base of the lower part of the "2,800-foot" sand.

SALT-WATER ENCROACHMENT

A number of factors may affect the movement or encroachment of salt water into a sand originally containing fresh water. Some of these factors are discussed in general in this section.

The movement of salty connate water (water deposited or entrapped concurrently with the deposition of sediments) from downdip areas within the aquifer may occur when the natural downdip hydraulic gradient is reversed because of heavy pumping. In order to predict the possibility of such a reversal in the Baton Rouge area it would be necessary to determine the extent and location of the fresh water-salt water contact and the rate of movement of the salty water updip.

In many areas saline water is locally present in the lower part of a fresh-water sand. The interface, between the salty water and the fresh water above, moves up and down in accordance with the drawdown and recovery of fresh-water head in the aquifer. If the pressure head in the fresh-water zone is reduced by pumping, the interface rises in response to the density head of the salt water until the fresh-water and salt-water heads are in equilibrium; if the equilibrium level of the interface is still below the bottoms of the wells tapping the fresh-water zone then fresh water is still yielded by the wells. Nevertheless, the presence of a salt-water mound or ridge beneath pumped wells poses a constant threat of encroachment. Further detailed study would be required to determine which sands contain such salt-water bodies, and at what places.

Structural discontinuities (principally faults) may allow salty water to migrate from sands containing salty water into fresh-water sands where these sands are hydrologically interconnected. In the Baton Rouge industrial district this possible movement of salty water would be encouraged by heavy pumping and the consequent lowering of the artesian pressure head in the fresh-water sand.

Over a long period of time, it is possible for salt water to migrate upward through a relatively impervious bed, such as clay, into sands containing fresh water as a result of a pressure-head differential caused by pumping from wells screened in the fresh-water sands and a lowering of the hydrostatic head in those sands. The magnitude of such movement can be determined only if there is detailed information on the thickness and permeability of the clay and differences in head. Such information is not now available for the Baton Rouge area, but it is believed that the amount of salt water entering fresh-water sands by this method is inconsequential.

In recent years the chloride content of water collected from well EB-123, screened in the "600-foot" sand and originally used to supply water for the swimming pool at the Baton Rouge City Park (about 3 miles south of the industrial district), has risen from 7 ppm in 1947 to 710 ppm in 1950. Since 1948 water for this swimming pool has been obtained from the city supply and this well has not been in use, and further observations of the chloride content of the water from this well have not been made. However, as shown by the chemical analyses made of water collected from wells EB-129 and -493 (see table 1) the chloride content is unusually high (above 100 ppm) for those wells located immediately south of the Baton Rouge industrial district. (See pl. 3.)

An examination of the chemical analyses made of water collected from wells screened in sands other than the "600-foot" sand reveals that the maximum chloride content reported is 24 ppm. The analyses of water collected from wells screened in the "600-foot" sand in the central and northern parts of the Baton Rouge industrial district do not show effects of salt-water encroachment. However, continued observation by periodic chloride analyses of the water should be made in order to determine the extent of salt-water encroachment in the "600-foot" sand.

TEMPERATURE OF GROUND WATER

One of a number of factors that influence the selection of an industrial water supply is the temperature of water at the source and point of use (Cross, *in* McGuinness, 1951, p. 82). Because ground water is comparatively uniform in temperature, and that from shallow aquifers is cooler than surface water in summer, it is usually more desirable for industrial purposes than is surface water. In Baton Rouge, ground water with temperatures ranging from 71° to 96° F is available for industrial purposes. Temperature data on water pumped from wells screened in the sands of Pleistocene and Miocene ages are plotted on figure 40 which

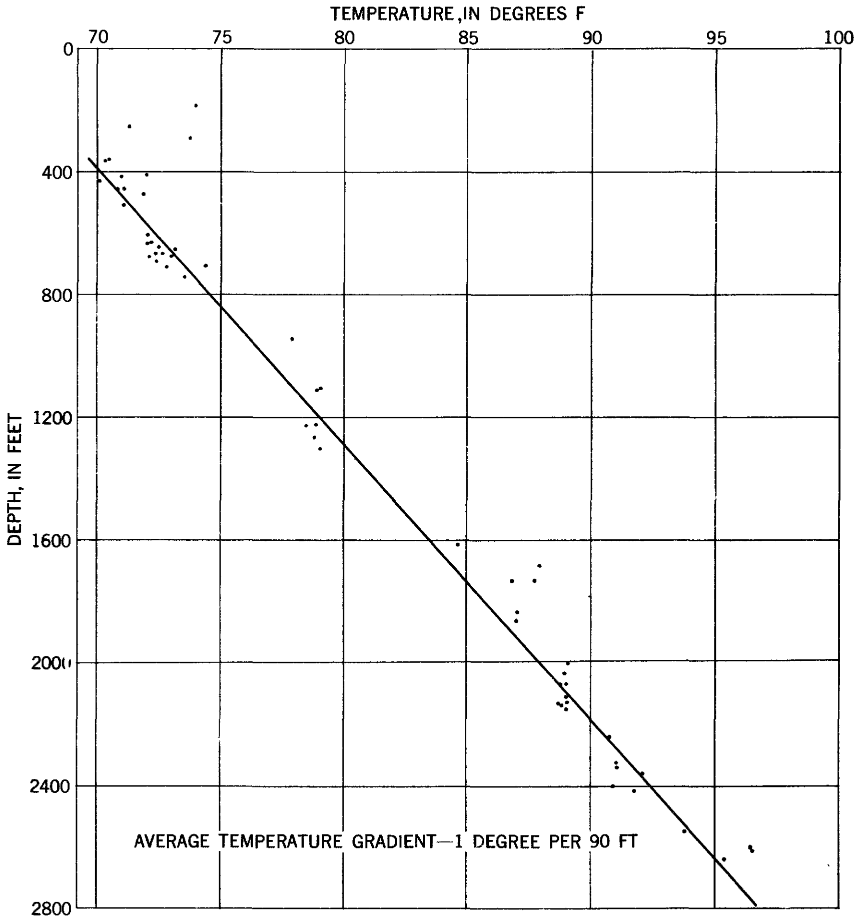

Figure 40. —Diagram showing the temperature of water from wells in the Baton Rouge area.

shows the temperature change with increasing depth. As noted on this graph, the temperatures obtained for each depth vary; this may be due to friction in the well casing and pipe and to methods of measurement as well as to slight temperature differences within each aquifer. However, the range within a given aquifer is very limited, and a line was drawn through the largest concentration of points. From this line it is determined that the temperature of water from wells in the Baton Rouge area increases by 1° F for about each 90-foot increase in depth. This thermal gradient corresponds in general with those observed in other areas where the rocks have been little disturbed and the records obtained from deep wells show that the temperature increases 1° F for about each 40 to 90 feet of increase in depth (Stearns, Stearns, and Waring, 1937, p. 68).

CONCLUSIONS

The principal area of ground-water use in the Baton Rouge area is the industrial district adjacent to the Mississippi River in the northern part of the city of Baton Rouge. A total of about 56 mgd is pumped from wells for industrial purposes within the district. The most highly developed aquifers are the "400-" and "600-foot" sands of Pleistocene age and the "2,000-foot" sand of Miocene age.

About 31.7 mgd are pumped from wells tapping the "400-" and "600-foot" sands. Many of these wells are screened in both sands and, consequently, it is not possible to determine the quantity of water pumped from each sand. The static water levels in the "400-foot" sand are about 185 feet below the surface and the pumping levels are as much as 280 feet below the surface. The pumping levels in some wells are below the top of the aquifer and thus the uppermost sediments around each such well are being drained. As this occurs, the yield of the wells eventually may be expected to decline. The depth below the land surface and the depth within an aquifer to which the water levels can be drawn, and the decrease in yield that can be tolerated, are largely a matter of economics and cannot be specified exactly. However, as a general rule it may be stated that there is some danger of overdevelopment if the water levels are drawn substantially below the top of the aquifer. Hence, in this respect the "400-foot" sand may be considered to be in danger of overdevelopment in the industrial district. About 38 large-capacity wells screened in the formation are in use within the district, and additional wells could be installed within the central part of the industrial district only at the risk of excessive interference with existing wells. When replacement wells are installed it would be desirable to locate them as far as possible from existing centers of pumping, to minimize the interference between wells.

The static water levels in the "600-foot" sand are about 150 feet below the land surface and the pumping levels are about 240 feet below the land surface. Thus, the pumping levels are at least

150 feet above the bottom of the confining clay capping the "600-foot" sand. The amount of interference between wells can be calculated from the coefficients of transmissibility and storage and, inasmuch as some additional water could be pumped without lowering the static levels below the top of the aquifer, it may be practicable to drill more wells into the sand. However, replacement or additional wells should be spaced as far as possible from existing wells.

Results from pumping tests on wells in the "400-" and "600-foot" sands (see table 4) indicate that the thickness and the average permeability of the "600-foot" sand are greater than these of the "400-foot" sand. This may, in part, be the cause of the lower water levels in the "400-foot" sand. The past and present discharge from 44 wells screened in both the "400-" and the "600-foot" sands have caused water levels to decline about 185 and 150 feet below the land surface, respectively. However, future declines will be at a greatly reduced rate unless the pumping rate is increased, or there is dewatering of a large area of the "400-foot" sand. The average coefficient of transmissibility for the two sands together was computed from water-level records of well EB-22 to be 110,000 gpd per foot. This value compares well with that of 125,000 gpd per foot determined by Cushing and Jones (1945, p. 30). Using the water-level fluctuations of well EB-22 and projecting the drawdowns into the future, it is estimated that if pumpage remains the same as at present the average water level will be lowered by an additional 6 feet during the next 10 years; in other words, the theoretical static level in well EB-22 in 1963 would be about 188 feet below the land surface. Because of the relatively low temperature of water from the "400-" and "600-foot" sands, ranging from 71° to 74° F, one of the principal uses of their water in the industrial district is for cooling purposes. Thus, it may be desirable to install more wells in the "600-foot" sand even though pumping lifts will be increased. The increased pumping lifts may be estimated roughly by using the data presented in figures 18 and 19 showing the theoretical drawdown caused by pumping from a well in an ideal aquifer having the hydrologic characteristics determined for the "600-foot" sand.

The "800-foot" and "1,000-foot" sands are relatively thin and thus their coefficients of transmissibility are relatively low. Locally, they may yield large supplies to wells; however, their potential capacity is not so great as that of some of the underlying sands.

In the Baton Rouge area the "1,200-foot" sand is relatively thick and permeable. Only a few wells obtain water from this sand, and consequently the water levels are close to the land surface. This sand, if it is developed by means of properly spaced wells, is a large potential source of industrial water having a temperature of about 80° F.

To the east of the industrial district the "1,500-foot" sand has a thickness of about 200 feet and is one of the chief sources of water for public-supply wells. As the water levels are near the land surface and comparatively few wells are screened in the sand, it undoubtedly can be developed to a much greater extent than at present (1953).

The "1,700-foot" sand is irregular in thickness and areal extent and only four wells are screened in it. More water can be obtained from this sand where it has an adequate thickness; however, the local irregularities of the sand preclude its development on a regional scale.

The "2,000-foot" sand is one of the thickest and potentially one of the most productive aquifers in the area. Since 1950 the water levels have remained at approximately 55 feet below the land surface and there are no indications of excessive declines. Much more water may be obtained from this aquifer within the Baton Rouge area without excessive lowering of the water levels. If additional wells are drilled to this sand, they should be spaced so as to minimize interference.

The "2,400-foot" sand yields about 5.5 mgd to industrial and public-supply wells in the Baton Rouge area. Long-term water-level records are not available for this aquifer. However, water levels are above the land surface outside the district, indicating that there has been no excessive widespread lowering of water levels. The aquifer has a relatively large areal extent and is a potential source of good-quality water, having a temperature of about 91°–92° F.

At present (1953) only three wells are developed in the "2,800-foot" sand in the industrial district. The water levels are about 75 feet above the land surface; however, there will probably be a rapid decline in artesian pressure as more wells are completed in this sand. The hydrologic characteristics of the aquifer are not known, but the yield of existing wells indicates that relatively large quantities of fresh water having a temperature of about 96° F can be obtained from the upper part of the "2,800-foot" sand. Salt water is present near the base of the lower part of the "2,800-foot" sand, and consequently in the industrial district this part of the aquifer does not offer a potential source of fresh water.

An important problem in the Baton Rouge industrial district is the status of salt-water encroachment. Present data indicate that there may be migration of salt water in the "600-foot" sand toward the industrial district. Adequate data are not available to determine the exact position of the salt-water front, or the rate of its movement. Analyses of water samples collected during this investigation do not indicate that salt-water contamination in the industrial district is imminent; however, it is essential that observations be continued and studies be made to determine the status of salt-water movement. If salt water enters the industrial district through the "600-foot" sand it will not only contaminate one of the principal aquifers in the area, but it will be a potential source of contamination of other fresh-water-bearing sands. In view of the problem of salt-water encroachment and the lack of information on the quantity of water moving into the area, there is need for the continuation of a study of the area, including the area to the north where the aquifers are at or near the surface and water enters them. This program should consist of (1) the collection of well records, (2) continuation of the inventory of water use and measurements of water levels to determine general trends in all principal aquifers, (3) collection and analysis of geologic and quality-of-water data from the outcrop areas southward to the industrial district, and (4) determination of the areal hydraulic characteristics of the aquifers by the analysis of additional pumping tests and of piezometric maps.

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CHEMICAL ANALYSES

Table 1.—*Selected chemical analysis of water*

[Analyses made by Quality of Water Branch, U. S. Geological

U. S. Geol. Survey well no.	Depth of well (feet)	Date of collection	Constituents (parts per million)					
			Silica (SiO_2)	Total iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)
								Recent
EB-100	343	May 9, 1951	34	1.3	62	18	20	2.4
EB-501	197	Sept. 22, 1949	36	18	....	....	....	....
								"400-foot"
EB-155	412	Jan. 25, 1945	48	0.04	13	3.3	30	4.5
EB-354	416	Jan. 25, 1945	50	.37	7.6	2.8	45	4.0
EB-357	433	June 21, 1944	46	.57	6.5	3.0	47	5.5
EB-360	442	Jan. 26, 1945	49	.16	21	5.8	31	5.2
								"600-foot"
EB- 60	644	Jan. 26, 1945	54	0.05	14	3.3	30	4.4
EB-129	748	June 22, 1950	47	.33	26	6.8	[1]101	....
EB-493	704	Aug. 29, 1952	36	.03	18	2.7	201	1.6
EB-518	550	May 6, 1952	55	1.2	11	2.7	36	.8
								"800-foot"
EB-120	946	Jan. 23, 1945	23	0.04	2.2	0.1	73	2.6
								"1,200-foot"
EB-392	1,464	Sept. 4, 1951	52	0.35	1.3	0.7	55	
EB-403	1,270	Mar. 23, 1953	32	.04	.2	.3	67	.6
WBR-5	1,338	Dec. 9, 1952	30	.01	.2	0	70	.5
								"1,500-foot"
EB-413	1,745	May 6, 1952	31	0.25	0.4	0.5	77	1.2
EB-510	1,605	May 9, 1951	36	.24	.4	.3	67	.4
								"1,700-foot"
EB- 68	1,817	June 20, 1944	30	0.04	0.8	0.3	67	3.4
WBR-4	1,863	Dec. 9, 1952	26	.01	.1	.1	70	.6
								"2,000-foot"
EB- 70	2,075	June 20, 1944	27	0.03	1.7	0.2	66	3.8
EB-384	1,919	Nov. 28, 1944	26	.12	3.7	.1	71	3.7
EB-444	2,253	May 9, 1951	24	.23	1.0	.3	91	2.0
EB-456	1,895	May 9, 1951	23	.13	1.3	.2	83	3.2
								"2,400-foot"
EB-352	2,413	June 22, 1944	22	0.03	1.2	0.3	76	5.0
EB-468	2,430	Mar. 15, 1948	23	.05	.7	.5	86	.4
								"2,800-foot"
EB-517	2,590	Aug. 28, 1952	25	0.01	0.8	0.3	152	0.8

[1]Calculated.

collected from wells in the Baton Rouge area

Survey. Well locations are shown on plate 3, figures 13 and 21]

Constituents (parts per million)								Specific conductance (micromhos at 25°C)	Color	pH
Carbonate (CO_3)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$			
deposits										
0	314	1.0	7.2	0.1	2.5	300	228	505	....	7.5
0	331	....	30	....	....	....	266	622	....	7.8
sand										
0	119	7.9	8.0	0	0.2	184	46	229	....	7.5
0	146	4.9	6.8	0	0	200	36	252	....	7.8
0	147	4.5	8.0	.1	.2	200	29	256	....	8.4
0	158	6.3	10	0	0	219	76	291	....	7.6
sand										
0	124	8.3	6.0	0	0.2	187	48	233	....	7.9
0	152	7	128	....	0	400	93	717	....	7.4
0	181	8.4	235	.3	.5	593	56	1,060	0	8.0
0	122	9.4	7.2	.2	.5	193	39	234	0	7.4
sand										
26	134	10	3.0	0.2	0.2	208	6	318	....	8.4
sand										
0	133	8.6	5.5	0.1	0.5	193	6	256	....	7.7
0	162	9.2	4.5	.2	0	201	2	284	5	8.0
0	166	9.9	3.3	.2	.2	196	0	279	10	8.1
sand										
6	178	9.5	3.5	0.3	0.2	219	3	326	0	8.6
0	162	9.6	4.0	.1	1.2	202	2	279	....	8.3
sand										
19	129	8.6	5.0	0.3	0.2	200	3	287	....	8.4
0	173	9.1	3.2	.2	.2	197	1	280	10	8.1
sand										
24	119	10	3.0	0.1	0.2	195	5	288	....	8.4
13	163	7.9	4.0	.2	.2	209	10	383	....	8.2
19	190	11	5.0	.3	.2	241	4	383	....	9.0
10	186	9	3.8	.3	1.0	223	4	347	....	8.8
sand										
28	139	8.1	4.0	0.1	0.2	209	4	325	....	8.7
20	174	12	2.0	.4	.2	243	3.8	373	....	9.2
sand										
13	322	6.7	24	0.8	0	386	4	626	20	8.6

Table 2.—*Chemical analyses of water from well EB-501 showing change in quality of water with pumping*

Date of collection	Constituents (parts per million)						pH	Specific conductance (K x 10^6 at 25°C)	Temperature (°F)
	Silica (SiO_2)	Total iron (Fe)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Chloride (Cl)	Total hardness as $CaCo_3$			
1949									
Sept. 22....	36	18	0	331	30	266	7.8	622	69
Sept. 29....	42	17	0	354	31	278	7.7	665	68
Oct. 6....	38	17	0	278	33	231	8.4	560	69
Oct. 13....	40	17	0	318	31	250	7.8	602	70
Oct. 20....	56	16	0	278	32	234	8.2	565	70
Oct. 27....	34	14	0	270	31	216	7.4	548	71
Nov. 3....	34	14	0	262	32	210	8.1	533	
Nov. 10....	38	15	0	256	33	212	7.5	569	73
Nov. 17....	34	14	0	244	34	202	8.0	532	71
Nov. 23....	34	12	0	246	33	202	8.0	530	73
Nov. 30....	32	14	0	240	30	194	7.7	521	72
Dec. 7....	33	12	0	256	30	206	7.9	533	73
Dec. 14....	42	11	7	206	33	188	8.5	495	66
1950									
Jan. 4.....	58	11	0	238	31	200	8.2	508	71
Jan. 11.....	52	12	0	225	33	196	8.3	502	70
Jan. 18.....	42	11	7	204	33	196	8.5	503	70
Jan. 25.....	39	12	0	222	35	200	8.3	526	70
Feb. 1.....	36	11	0	209	32	188	8.3	496	69
Feb. 8.....	32	9.6	0	205	33	184	8.3	495	68
Feb. 23.....	29	9.2	0	196	30	176	8.3	480	67
Mar. 2.....	28	8.2	0	190	29	168	8.2	462	66
Mar. 9.....	28	9.2	0	200	26	176	8.1	461	66
Mar. 17.....	32	9.5	0	175	25	160	8.2	411	65
Mar. 23.....	33	7.2	0	187	23	162	8.1	432	64
Mar. 30.....	28	7.4	0	179	22	150	8.2	392	63
Apr. 6.....	28	6.4	0	175	23	156	8.2	409	63
Apr. 13.....	28	7.0	0	157	21	156	8.2	378	62
Apr. 27.....	28	8.0	0	154	20	138	8.2	368	61
May 4.....	28	7.4	0	153	19	136	7.8	375	61
May 12....	28	7.4	0	152	21	138	7.8	375	60
May 19.....	26	7.3	0	150	20	139	7.9	366	60
June 16.....	28	7.8	0	171	20	140	8.2	383	60
June 23....	28	8.2	0	160	20	140	8.3	368	61
July 3.....	25	8.2	0	159	20	146	8.3	380	61
July 7.....	46	8.7	0	175	21	152	8.3	393	60
July 13.....	28	8.9	0	155	20	144	8.3	369	60
July 20.....	28	8.8	0	166	20	144	8.3	374	60
July 27.....	25	8.7	0	168	20	145	8.2	379	61
Aug. 11.....	24	7.4	0	156	26	156	8.1	396	62
Aug. 18.....	26	8.0	0	167	18	145	8.3	387	60
Aug. 25.....	25	7.9	0	168	20	156	7.5	387	63
Sept. 1....	26	9.8	0	160	20	150	7.9	379	59
Sept. 8....	28	9.7	0	162	22	150	7.7	397	65
Sept. 15....	24	8.6	0	172	24	154	7.5	395	
Sept. 22....	24	8.2	0	162	24	156	8.1	393	66
Sept. 29....	26	6.5	0	164	29	160	8.0	391	67
Oct. 6....	27	7.8	0	165	26	158	7.9	389	67
Oct. 13....	26	7.5	0	175	25	160	8.1	390	68

Table 2.—*Chemical analyses of water from well ED-501 showing change in quality of water with pumping*—Continued

Date of collection	Constituents (parts per million)						pH	Specific conductance (K x 10^6 at 25° C)	Temperature (°F)
	Silica (SiO_2)	Total iron (Fe)	Carbonate (CO_3)	Bicarbonate (HCO_3)	Chloride (Cl)	Total hardness as $CaCO_3$			
1950—Continued									
Oct. 20.....	24	7.6	0	163	25	156	7.9	395	68
Oct. 27.....	28	7.9	0	165	26	156	8.1	387	70
Nov. 10.....	25	7.0	0	165	25	154	8.3	383	69
Dec. 8.....	25	7.6	0	163	27	154	8.0	403	69
1951									
Aug. 1.....	27	10	....	166	26	154	8.2	407	71
Aug. 8.....	24	7.9	....	167	26	158	8.1	409	73
Aug. 15.....	24	8.2	....	170	26	158	8.1	406	73
Aug. 22.....	26	7.7	....	169	26	162	8.1	414	
Aug. 29.....	26	7.6	....	171	26	160	7.9	422	74

DRILL CUTTINGS

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*

Well EB-398

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"1,500-foot" sand:		
Sand, medium, yellowish-gray to buff; well sorted; about 95 percent subrounded clear quartz; 3 percent subrounded to rounded feldspar (mainly alkali); and about 2 percent subangular dark minerals. Iron oxide staining negligible	10	1,520
Sand, medium, yellowish-gray to buff; 95 percent rounded to subrounded quartz; 3 percent subrounded feldspar; and 2 percent subrounded dark minerals. Chert grains are present in a very minor amount. Iron oxide staining negligible	10	1,530
Sand, medium to coarse, yellowish-gray; about 92 percent subrounded to rounded quartz (of clear, milky, and pink varieties in decreasing amounts); about 6 percent subrounded to subangular feldspar (both alkali and potash); and about 2 percent subrounded to rounded dark minerals (probably hornblende). 5 percent of quartz has iron oxide stains	12	1,542
Sand, medium-coarse, light-gray; 93 percent subrounded to rounded milky, clear, and pink quartz; 5 percent subrounded feldspar (alkali and potash); 2 percent subangular to subrounded dark (probably amphibole) minerals and a small amount of chert. Iron oxide staining negligible, but when present is a very dark color. Large feldspar grains and minor amounts of chert give the sample a dark color	1	1,554
Sand, medium to coarse, yellowish-gray; about 96 percent subrounded to rounded milky and clear quartz, about 5 percent of which is stained by iron oxide; 2-3 percent subrounded feldspar (principally alkali); and about 1 percent subangular to subrounded dark (amphibole and pyroxene) minerals	10	1,563
Sand, medium-coarse, light-gray; 96 percent quartz grains of milky and clear varieties which are subrounded to rounded and of which 5-10 percent are coated with an iron oxide stain; 2 percent rounded feldspar; 1 percent subangular to subrounded dark minerals; and 1 percent subrounded dark-brown chert	8	1,571
Miocene deposits:		
"2,000-foot" sand:		
Sand, medium, gray-buff; 90 percent subrounded to subangular quartz; 8 percent subrounded feldspar (more alkali than potash); and 2 percent subrounded to rounded dark minerals. Iron staining on quartz not prominent, but large (coarse to very coarse) feldspar grains aid in coloring	10	1,990
Sand, fine, yellowish-gray; 95 percent subangular to subrounded milky and clear quartz, a small amount having iron oxide staining (less than 5 percent); 2 percent subrounded feldspar (more alkali than potash); and 3 percent subangular to subrounded dark minerals. Sand is well sorted	10	2,000
Sand, fine to medium, yellowish-gray; about 95 percent subrounded quartz; 2 percent subrounded feldspar; and 3 percent subrounded dark (principally amphibole) minerals. The clear and milky quartz present has only a slight amount of iron oxide staining. The feldspar grains are medium coarse and are alkali principally	10	2,010
Sand, fine to medium, yellowish-gray; about 95 percent subrounded quartz; about 2 percent subrounded to rounded feldspar; and 3 percent		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-398—Continued

	Thickness (feet)	Depth (feet)
Miocene deposits:—Continued		
"2,000-foot" sand—Continued		
subrounded dark (mainly amphibole) minerals. Clear and milky quartz varieties have iron oxide staining on about 5 percent of the grains. Sand is well sorted	10	2,020
Sand, fine to medium, yellowish-gray; about 95 percent subangular to subrounded milky and clear quartz, a negligible amount of which is stained by iron oxide; 3 percent subangular to subrounded feldspar (both alkali and potash); and 2 percent dark (mainly amphibole) minerals. Feldspar grains generally larger than other grains; minor amount of chert present	11	2,031
Sand, medium, light-yellowish-gray; 96 percent subangular to rounded clear and milky quartz; 2 percent subrounded feldspar grains; and about 2 percent subrounded dark minerals (mainly amphibole). The iron oxide staining is very minor in amount and very light in color	11	2,042
Sand, medium, yellowish-gray; 96 percent subrounded to rounded quartz grains, a minor amount of which have iron oxide staining; 2 percent subrounded feldspar, generally a little larger than the quartz or dark minerals; and 2 percent subrounded dark (pyribole) minerals	12	2,054
Sand, medium, yellowish-gray; 96 percent subrounded to rounded quartz (almost all clear); 3 percent subrounded feldspar (almost all alkali); and 1 percent dark minerals (hornblende) which are subangular. Of the quartz, 5 to 10 percent bears iron oxide stain	12	2,066
Sand, fine to medium, yellowish-gray to buff; 95 percent subrounded to subangular quartz, mostly clear (a few milky grains); 2 percent subangular to subrounded feldspar (principally alkali); and about 3 percent subrounded dark minerals. About 20 percent of the quartz grains have iron oxide staining	11	2,077
Sand, medium-fine, yellowish-gray; 95 percent subrounded to rounded clear quartz; 3 percent subrounded feldspar; and about 2 percent subangular dark minerals(such as magnetite and hornblene). The quartz grains are well sorted and generally fine, but the feldspar grains are much larger. Very slight iron oxide staining on quartz	10	2,087
Sand, medium, yellowish-gray; 95 percent subrounded to subangular clear quartz; 3 percent subrounded feldspar (these grains are generally much larger than the quartz grains); and 2 percent subrounded to subangular dark minerals. The sand is well sorted, particularly the quartz grains, of which up to 5 percent have an iron oxide stain	11	2,098
Sand, medium, yellowish-gray; 97 percent subrounded quartz; 2 percent subrounded feldspar; and 1 percent subangular to subrounded dark minerals (hornblende). Very little or no iron oxide staining	12	2,110
Sand, medium, yellowish-gray to buff; about 95 percent subangular to rounded quartz; 2 percent subrounded feldspar (principally alkali); 2 percent subrounded dark minerals; and about 1 percent subangular chert (red and brown) grains. Quartz in clear and milky varieties, of which about 5 percent bears iron oxide stain	12	2,122
Sand, fine to medium, yellowish-gray; about 95 percent subrounded to subangular quartz; 3 percent subrounded feldspar (mostly alkali); and 2 percent subrounded dark (pyribole) minerals. Some 10-15 percent of the clear and milky quartz is stained with an iron oxide. Flat surfaces on quartz grains give the sample a micaceous luster	11	2,133
Sand, medium, yellowish-gray; 96 percent subrounded to rounded quartz (chiefly clear, some milky); 3 percent subangular to sub-		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-398—Continued

	Thickness (feet)	Depth (feet)
Miocene deposits:		
"2,000-foot" sand—*Continued*		
rounded feldspar (both alkali and potash); 1 percent subrounded dark minerals (mostly pyribole); and minor amounts of subangular to angular chert grains. A few quartz grains are iron stained	11	2,144
Sand, medium, yellowish-gray; 96 percent subrounded quartz; 1 percent subrounded feldspar (potash mostly); and 3 percent subrounded to rounded dark minerals (chiefly hornblende). A few (5-10 percent) of the quartz grains have iron oxide stains, and there is chert present in very minor amounts. Sand is fairly well sorted	13	2,157
Sand; principally medium, grading to fine; very yellowish-gray; 97 percent subrounded, clear (a small amount, 2 percent, pink) quartz; about 1 percent rounded to subangular feldspar; and about 2 percent subangular dark minerals. Slight iron oxide staining on quartz grains	9	2,166
Sand, medium, yellowish-gray; 98 percent rounded to subrounded quartz; 1 percent subrounded feldspar; and 1 percent subrounded to subangular dark minerals	11	2,177
Sand, medium, very yellowish-gray; about 97 percent subangular to subrounded quartz (clear) grains; 1 percent subangular to subrounded feldspar; and 2 percent generally subangular dark minerals. About 10-20 percent of quartz is stained by oxide	13	2,190
"2,400-foot" sand:		
Sand, fine- and coarse-grained (the medium grains are generally absent and the fine grains make up some 90 percent of the sand) yellowish gray-buff; about 92 percent subrounded clear quartz; about 5 percent subrounded feldspar; and about 3 percent subangular to subrounded dark (probably chiefly hornblende) minerals. Negligible amount of iron oxide staining	10	2,400
Sand, fine to coarse, yellowish-gray. The subrounded feldspar grains are generally largest of all; the subangular quartz grains are the clear and smoky varieties; and the dark (probably hornblende) minerals are rounded. Quartz makes up about 82 percent, the feldspar 17 percent and the dark minerals about 2 percent of the sand. A slight amount of quartz (less than 3 percent) has iron oxide staining	12	2,412
Sand, medium-coarse, yellowish-gray; 92 percent subangular to subrounded quartz; 6 percent subrounded feldspar; and 2 percent subrounded dark (probably hornblende) minerals. The quartz is generally medium-grained, but the feldspar is coarse	11	2,423
Sand, fine, yellowish-gray; 98 percent subrounded quartz; about 1 percent subangular to subrounded feldspar (chiefly potash) grains; and about 1 percent subrounded dark minerals	11	2,434
Sand, medium, yellowish-gray to light-buff; 94 percent clear and milky, subrounded to rounder quartz; about 4 percent subrounded feldspar grains; and 2 percent subrounded dark minerals. Feldspar (both potash and alkali) is coarse grained. Tendency to buff color is due to brown-to-orange color of feldspar (orthoclase) and brown coating on quartz grains	11	2,445
Sand, fine, yellowish-gray; 90 percent subrounded, clear quartz; 7 percent subangular to subrounded feldspar; and about 3 percent subrounded dark minerals (probably some augite). Feldspar grains are generally coarse, and none or few medium grains are present. About 5 percent of quartz bears an iron oxide stain	12	2,457

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
Clay, silty, grayish-yellow; about 90 percent feldspar which is almost entirely alkali; about 9 percent quartz; and about 1 percent dark (probably amphibole) minerals. The quartz is chiefly of a clear variety and is subangular to angular. The feldspar is granular and has the appearance of an aggregate of fine crystalline feldspar..............	22.5	22.5
Clay, very fine, slightly silty, consisting essentially of alkali granular feldspar. The color is grayish orange, but upon close inspection, splotches can be seen that are dusky red, grayish red, and very light gray. Grains are too small to determine percentage of composition....	20.5	43.0
Clay, silty, moderate yellowish-brown; about 80 percent feldspar (60 percent alkali and 40 percent potash); 16-18 percent quartz (of silty size); and 2-4 percent quartz and chert grains which are 2 mm in diameter and above. Individual pellets of the clay range in color from dusky red, pale yellowish orange to a very light gray...............	22.5	67.5
Sand, very fine, pale yellowish-brown; about 95 percent subangular to subrounded quartz (both clear and milky); 4 percent subrounded to rounded alkali feldspar; and 1 percent large (over 2 mm) brown chert and clear quartz. Minor amounts of dark-red hematite grains are present. No iron oxide staining is present..................................	12.5	100.5
Clay, variegated colors: very light-gray, brown, and red. About 1 percent of the coarse (1-2 mm) quartz grains and about 8 percent of the sample is limonitic clay and about 4-5 percent is hematite.........	22.5	123.0
Clay, silty, varicolored. The pellets are light gray, to a grayish-orange pink. Quartz grains are subrounded and make up less than 3 percent of the sample. Dark clays are absent................................	22.5	157.5
"400-foot" sand		
Sand, fine to medium, pinkish-gray to white; about 99 percent subrounded to rounded milky and clear quartz. The feldspar is mostly potash and is also subrounded to rounded, these grains being larger than the quartz grains. This sand is striking because of its well sorted quartz grains and its light color. Very slight iron oxide staining of quartz grains. The subrounded dark (pyribole) minerals are about the same size as the quartz grains..	22.5	202.5
Sand, medium to coarse, grayish-orange; 99 percent milky, clear, and pink (about 3 percent) rounded to subrounded quartz; 1 percent dark minerals, which include pyroxene and amphibole; and a minor amount of potash feldspar. Iron oxide staining negligible.................	22.5	225.0
Sand, variegated, slightly calcareous, poorly sorted; milky and clear subrounded to rounded quartz, ranging in size from 0.25 to 4.0 + mm in diameter, and making up some 50-30 percent of the sample; granules of subangular chert which is brown and gray, and subrounded feldspar, totalling about 10-15 percent; light gray clay granules, about 10-15 percent; and granules of silt cemented by a black ferruginous cement..	22.5	292.5
Sand, medium to very coarse, light-gray; about 70 percent of the sample is well rounded milky and clear quartz. Thirty percent of the sample consists of: 10 percent round granules of silt cemented by a brownish-black ferruginous cement; about 10 percent granules of subrounded alkali and potash feldspar; and another 10 percent, fragments (about 2 mm in diameter) of white-gray calcareous material and a very minor amount of magnetite; there is also a small limonite concretion of about 3 mm diameter...	22.5	315.0
Sand, medium, light-gray; about 90 percent rounded to subrounded, milky and clear quartz; about 5 percent subangular to subrounded soda and alkali feldspar which is much larger (up to 2.0 mm) than the		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"400-foot" sand—Continued		
quartz and the dark minerals that are probably subrounded amphibole grains; these last are present to about 4 percent; there are also minor amounts of pistachio-green to dull-green minerals which are probably epidote	22.5	360.0
Sand, medium, yellowish-gray; about 95 percent subangular to subrounded clear and milky quartz; about 4 percent (principally alkali) subrounded to rounded feldspar grains which are poorly sorted; and about 1 percent subrounded dark (pyribole) minerals. There are a few granules of quartz grains cemented by a slightly calcareous clay. Iron oxide staining negligible	22.5	382.5
Sand, medium to coarse, yellowish-gray; about 95 percent milky, clear, and some pink subrounded to rounded quartz grains; 4 percent subrounded calcic (little sodic) plagioclase; and 1 percent subrounded dark (black to gray) minerals. Minor amounts of red and brown chert present and minor amount of iron oxide staining (about 3 percent of the quartz)	22.5	405.0
Sand, fine to medium, light-gray; about 92 percent subrounded to rounded clear and milky quartz; 5 percent subangular to angular feldspar which is principally potash; and 3 percent dark (pyribole) minerals, hematitic silt granules, brown chert, and quartz grains cemented by clay. The sample is poorly sorted, the grain size of the quartz and dark minerals being much smaller (fine to medium) than the granules of feldspar, chert, and other constituents. No iron oxide staining visible	22.5	427.5
Sand, gravelly, variegated, a maximum pebble diameter of about 8.0 mm. About 60 percent of the sample is medium-coarse sand, of which about 94 percent is subangular to subrounded clear, milky, and pink varieties of quartz; the remaining 6 percent is subrounded alkali feldspar. The rest of the sample consists of pebbles of potash feldspar (subangular), milky quartz (rounded), alkali feldspar (rounded), and brown chert (rounded). Dark minerals negligible and iron oxide staining lacking	22.5	450.0
Sand, argillaceous, grayish-orange pink. The sand (about 60 percent) is made up almost entirely of milky and clear subrounded quartz. Clay granules range in color from light gray to pink and make up about 40 percent of the sample. Dark minerals (mostly amphibole) and several green minerals (probably epidote) present in very minor amounts. No iron oxide staining	22.5	472.5
Sand, medium, light olive-gray; 70 percent rounded to subrounded, milky and clear quartz grains; about 28 percent subrounded to subangular feldspar grains, of which some 80-90 percent is alkali feldspar; and 2 percent angular to rounded, dark minerals and micaceous granules. Iron oxide staining negligible	22.5	495.0
"600-foot" sand:		
Clay, sandy calcareous, yellowish-gray; about 50-60 percent clay and 40-50 percent quartz grains. The quartz is of milky and clear varieties and is subrounded to rounded. The clay is light gray in color, and in some instances holds a cluster of quartz grains together. About 1 percent of the sample contains dark minerals. No iron staining present	22.5	630.0
Clay, sandy, calcareous, yellowish-gray. The ratio of clay to sand is about 55 percent to 45 percent. Almost all of the quartz is milky, being a darker variety than that previously described, and is subrounded. In general, the clay is a very light gray. There are small numbers of large (up to about 2 mm in diameter) quartz and feldspar grains. No iron staining present	28.5	658.5

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"600-foot" sand—Continued		
Clay, slightly silty, very calcareous, grayish-orange. The color of the clay differs in individual granules from light pink to very light gray. The sample contains a minor amount of white shell fragments. No iron oxide staining. About 5 percent of sample is quartz...........	22.5	697.5
"800- and 1,000-foot" sands:		
Clay, silty, very calcareous, light-brown to olive-gray. Individual granules of clay have colors of light pink, pinkish gray, and light gray, with occasionally a brown granule of clay minerals. About 10 percent of sample is quartz. No iron oxide staining......................	23.0	812.0
Sand, fine-medium, light olive-gray; about 95 percent subrounded clear and milky quartz; 4 percent calcic and sodic subangular to subrounded feldspar; 1 percent subrounded dark minerals, which are mainly amphiboles. About 1-2 percent of the sample is grains of feldspar and quartz from about 0.50 to 3 mm in diameter. Iron oxide staining negligible..	20.5	832.5
Sand, very fine to fine, light-gray; 95 percent subrounded to rounded milky and clear quartz; 3 percent subrounded, mainly alkali, feldspar, which in general is larger than the quartz; and about 2 percent subrounded to rounded dark minerals (chiefly amphibole), apatite, and probably epidote..	22.5	877.5
Sand, argillaceous, very fine, grayish-orange pink; about 80 percent is rounded to subrounded milky, clear, and some pink quartz; 18 percent is decomposing or decomposed feldspar (mainly alkali, but some potash); about 2 percent subrounded dark (amphiboles mainly) minerals. No iron oxide staining present..................................	22.5	900.0
Sand, slightly calcareous, argillaceous, very fine, yellowish-gray; about 70 percent subangular to rounded clear, milky, and pink quartz grains; 28 percent decomposing feldspar and clay minerals; and 2 percent dark minerals and apatite. No iron oxide staining......	23.5	967.5
Sand, fine to coarse, slightly argillaceous, yellowish-gray (clay present is calcareous); 85 percent subrounded to subangular quartz; 8 percent subrounded (almost all alkali) feldspar grains; 6 percent clay; and 1 percent subangular and subrounded dark minerals and apatite. A poorly sorted sand without any iron oxide staining..........	22.5	990.0
Sand, slightly calcareous, gravely, argillaceous, light-gray; about 85 percent subrounded to rounded clear and milky quartz; 12 percent feldspar, principally calcic, and clay; and 3 percent dark minerals and chert (brown). A very poorly sorted sand. No iron oxide staining	12.5	1,025.5
Sand, fine, light-gray; about 90 percent subrounded fine quartz (mostly clear); 5 percent subrounded feldspar and clear rounded quartz grains up to 1.5 mm in diameter; about 4 percent fine subrounded feldspar (chiefly alkali); and 1 percent subrounded dark minerals. No iron oxide staining..	22.5	1,072.5
Clay, silty, calcareous, light brownish-gray; 35 percent subrounded milky and some clear quartz. Clay colors range from very light gray and brown to pink. No iron oxide staining visible.................	22.0	1,082.0
"1,200-foot" sand:		
Clay, silty slightly calcareous, grayish-orange pink; 20 percent rounded to subrounded clear and milky quartz; and 80 percent light-gray, pink, and brown clay. No iron oxide staining visible............	22.5	1,125.0
Sand, medium, light-gray; 94 percent rounded to subrounded clear, milky, and pink quartz; 5 percent subrounded feldspar (alkali and a		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"1,200-foot" sand—Continued		
little potash); and 1 percent dark (pyribole) minerals. A very few white calcareous (probably shell) fragments are present (diameter of less than 3.0 mm). No iron oxide staining. About 4-5 percent of sample is made up of granules of quartz and feldspar	22.5	1,147.5
Sand, medium, pinkish-gray; rounded to subrounded quartz, milky and some pink varieties, to about 96 percent; about 3 percent subrounded alkali (very little potash) feldspar; and 1 percent subrounded dark minerals. Iron oxide staining negligible. Very well sorted	22.5	1,170.0
Sand, medium, yellowish-gray; 94 percent quartz, clear and milky, subangular with some rounded grains about 5 percent subrounded alkali and potash feldspar; and 1 percent subangular to subrounded dark minerals. No iron oxide staining	22.5	1,192.5
Sand, fine, "salt-and-pepper", yellowish-gray; about 96 percent milky and clear subangular to subrounded quartz; about 2 percent subrounded alkali (little potash) feldspar; 1 percent subrounded dark (amphibole chiefly) minerals; and 1 percent light green (probably apatite) and dull green (probably chlorite) minerals. No iron oxide staining	22.5	1,215.0
Sand, fine to medium, slightly calcareous, "salt-and-pepper", yellowish-gray; about 92 percent subangular to subrounded clear, milky, and some pink, fine and medium quartz grains; 6 percent subrounded alkali and potash feldspar grains, ranging from medium to fine; 2 percent subangular to subrounded dark minerals (mostly amphibole). No iron oxide staining	22.5	1,237.5
Sand, coarse, yellowish-gray; 97 percent subrounded to rounded clear, milky, and pink quartz grains; 1 percent subrounded alkali feldspar; 2 percent dark (amphibole principally) minerals, small green grains of apatite and epidote probably, and a minor amount of pyrite. No iron oxide staining	22.5	1,260.0
Sand, medium to coarse, light-gray; 98 percent clear and milky subrounded to rounded quartz grains; 1 percent alkali feldspar, which is subrounded; and 1 percent dark minerals, epidote, and pyrite grains. Iron oxide staining negligible	22.5	1,282.5
Sand, medium to coarse, light-gray; 98 percent clear and milky subrounded to rounded quartz grains; 1 percent subrounded alkali feldspar; and 1 percent dark minerals, epidote, and pyrite grains. Iron oxide staining negligible	22.5	1,305.0
Sand, very coarse, calcareous, argillaceous, yellowish-gray. The clay, which is calcareous, makes up about 20 percent of the sample, and is present as varicolored granules (less than 2.0 mm). The quartz is subrounded, milky, clear, and pink and is present to about 70 percent. Feldspar is chiefly alkali, subrounded, and about 5 percent of sample; an additional 4-5 percent is brown and brownish-red chert, and there is a minor amount of dark minerals. Very little or no iron oxide staining	22.5	1,327.5
"1,500-foot" sand:		
Sand, very fine to fine, light olive-gray; 95 percent subangular milky and clear quartz; 3 percent subrounded alkali feldspar; and 2 percent subangular to subrounded dark minerals and a minor amount of pyrite. Iron oxide staining lacking. A well sorted sand	23.0	1,395.0
Sand, very fine, very light-gray; 94 percent subangular to subrounded milky and clear quartz; 5 percent subrounded alkali feldspar; and 1 percent dark minerals (pyriboles). A small amount of pyrite is present and where seen appears to have grown with a dark mineral. No iron oxide staining	22.5	1,417.5

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"1,500-foot" sand—Continued		
Sand, coarse to very coarse, yellowish-gray; 90 percent subrounded to rounded quartz of clear, milky, and some pink varieties; about 8 percent subrounded alkali (a little potash) feldspar; 2 percent subangular to rounded dark (pyribole) minerals, some limonite, and chert. Small granules of quartz grains cemented together by a calcareous cement are present, these grains being smaller and less rounded than the larger quartz grains. No iron oxide staining	22.5	1,440.0
Sand, very fine, grayish-orange pink, slightly calcareous, clayey; 90 percent subangular to subrounded quartz grains (milky and clear); 9 percent pink, gray, and brown clay minerals which are calcareous; and 1 percent subangular to subrounded dark (pyribole) minerals	22.5	1,462.5
Sand, medium-coarse, very slightly calcareous, yellowish-gray 92 percent rounded to subrounded quartz (clear and milky); 6 percent subrounded alkali feldspar and gray-pink clay; and 2 percent dark minerals, brown chert, and a very minor amount of pyrite. No iron oxide staining	22.5	1,485.0
Clay, silty, yellowish-gray; 10 percent subrounded clear and milky quartz; 90 percent variegated (chiefly gray, pink, and light red) clay granules. No iron oxide staining present	22.5	1,507.5
Sand, very fine to fine, light olive-gray, calcareous, argillaceous; 55 percent subangular to subrounded milky and clear quartz, the larger (1/4-1/2 mm) quartz grains being the more rounded; 43 percent gray (some brown) clay, which is calcareous; about 1 percent angular brown chert grains up to 1/2 mm diameter; and 1 percent subrounded dark minerals and hematite. No iron oxide staining. Poorly sorted	22.5	1,530.0
Clay, silty, yellowish-gray, calcareous. Clay makes up just slightly more than 50 percent of the sample, and it is very light gray, with a few brown and red granules of clay. Slightly less than 50 percent is subangular to subrounded milky and clear quartz. About 1 percent subrounded dark (probably amphibole) minerals and a little hematite. No iron oxide staining	22.5	1,552.5
Sand, medium, "salt-and-pepper", yellowish-gray; 96 percent subrounded milky, clear, and pink quartz; 3 percent subrounded dark (amphibole) minerals; and 1 percent subrounded to rounded alkali feldspar grains. No iron oxide staining. Very well sorted sand	22.5	1,575.0
Same as above with light-gray, fine, "salt-and-pepper" sand	22.5	1,597.5
Sand, fine to medium, light-gray; 95 percent subrounded to rounded milky and clear quartz; 3 percent subrounded feldspar (almost all alkali); and 2 percent subrounded dark (amphibole and pyroxene) minerals, minor amounts of limonite, and apatite. No iron oxide staining. A well sorted sand, but does contain some (about 3 percent) quartz and feldspar grains up to 1/2-1 mm in diameter	22.5	1,620.0
Sand, very fine, yellowish-gray; 94 percent subangular to subrounded quartz (milky and clear); 4 percent subrounded, mainly alkali, feldspar, ranging up to 1/2 mm in diameter; and 2 percent subangular dark (chiefly amphibole) minerals, with a very minor amount of pyrite and hematite. Quartz grains are fairly well sorted. No iron oxide staining.	22.5	1,642.5
Sand, very fine, yellowish-gray; 96 percent subangular clear, milky, and pink quartz; 2 percent subrounded to subangular dark (amphibole) minerals; and 2 percent subrounded alkali feldspar, including a few grains of green apatite. Sand is poorly sorted. No iron oxide staining.	22.5	1,665.0
"1,700-foot" sand		
Sand, fine to coarse, light olive-gray; 93 percent subrounded to subangular milky, clear, and pink quartz; 4 percent subrounded alkali		

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"1,700-foot" sand—Continued		
and potash feldspar; 2 percent subrounded dark (pyribole) minerals; and 1 percent hematite, limonite, and chert. Very poorly sorted, especially the feldspar which grades from fine up to 1/2 or 1 mm in diameter. No iron oxide staining	22.5	1,710.0
Sand, medium-coarse, slightly calcareous, yellowish-gray; 94 percent subangular to subrounded milky and clear quartz; 4 percent subrounded feldspar (principally alkali); and 2 percent dark (amphibole) minerals, minor amounts of apatite, and limonite. A little iron oxide staining present. Poorly sorted sample	22.5	1,732.5
Sand, fine to coarse, yellowish-gray; 92 percent subrounded to rounded milky and clear (little pink) quartz; 6 percent very poorly sorted, subangular to subrounded alkali and potash feldspar; and 2 percent dark (pyribole) minerals. Iron oxide staining negligible	17.5	1,750.0
Sand, fine to coarse, light olive-gray; 90 percent subrounded to rounded clear, milky, and a little pink quartz; 8 percent subrounded alkali feldspar; 1 percent dark (pyribole) minerals; and 1 percent dark- and light-brown chert, light-green olivine, and magnetite (in decreasing amounts). No iron oxide staining. Poorly sorted	22.5	1,845.0
Sand, medium, yellowish-gray; 98 percent subrounded to rounded clear and milky quartz; 1 percent subrounded alkali feldspar; and 1 percent subangular to subrounded dark (amphibole) minerals and minor amounts of chert. No iron oxide staining	22.5	1,890.0
Miocene deposits:		
"2,000-foot" sand		
Sand, medium, yellowish-gray; 99 percent subrounded to rounded clear, milky, and a few pink quartz grains; 1 percent subrounded dark (probably amphibole) minerals and subrounded alkali feldspar. About 2 percent of quartz grains have a yellowish iron oxide staining. Very well sorted	22.5	1,957.5
Sand, medium, yellowish-gray; 99 percent subrounded to rounded clear, milky, and a few pink quartz grains; 1 percent subrounded dark (probably amphibole) minerals and subrounded alkali feldspar. About 2-3 percent iron oxide staining	22.5	1,980.0
Sand, medium, yellowish-orange gray; 97 percent subrounded milky, clear, and some pink quartz; 1 percent subrounded to subangular alkali and some potash feldspar; 1 percent subrounded dark (amphibole and pyroxene) minerals; and 1 percent subrounded brown, red, and bluish chert, and rounded hematite. Iron oxide staining on 5 percent of quartz grains. Well sorted	22.0	2,002.0
Sand, medium, yellowish-gray; 98 percent subrounded to subangular quartz grains of clear, milky, and pink varieties; 1 percent subangular to subrounded dark (pyribole) minerals; 1 percent subrounded alkali feldspar, brown and red chert grains, and green olivine. A minor amount of iron oxide staining. Numerous white shell fragments	22.5	2,025.0
Sand, medium to coarse, yellowish-gray; 95 percent subrounded to rounded milky and clear quartz; 2 percent subrounded feldspar (chiefly alkali); 1 percent subrounded dark (amphibole and pyroxene) minerals and brown chert; and 2 percent white fragments and valves of *Rangia (Miorangia) microjonnsoni*. No iron oxide staining. Sample is poorly sorted	22.5	2,047.5
Sand, medium to very coarse, variegated; about 75 percent subangular to rounded milky and clear quartz, ranging in size from 0.25 to 2.0 mm in diameter, the smaller grains being more rounded; 5 percent gray-pink clay and subrounded alkali feldspar; 4 percent dark-		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Miocene deposits:		
"2,000-foot" sand—Continued		
and light-brown chert; 1 percent dark minerals; and 15 percent fragments and valves of *Rangia (Miorangia) microjohnsoni*. No iron oxide staining. Sample very poorly sorted	22.5	2,070.0
Sand, medium to very coarse, yellowish-gray; about 90 percent rounded to subrounded clear and milky quartz grains; 4 percent subrounded alkali feldspar; 2 percent brown and brownish-red gray subangular to subrounded chert; 1 percent dark (pyribole) minerals that are rounded to subrounded; and 3 percent white shell fragments. Very poorly sorted. No iron oxide staining	22.5	2,092.5
Sand, medium to very coarse, light-gray; 92 percent subrounded to rounded quartz (milky and clear); 3 percent subrounded alkali feldspar; 2 percent granules of quartz cemented by clay; 2 percent subrounded brown chert and dark (pyribole) minerals; and 1 percent white shell fragments. No iron oxide staining. Very poorly sorted sample	22.5	2,115.0
Sand, medium to coarse, very light-gray; 96 percent subrounded clear and milky quartz; 2 percent alkali subrounded feldspar; 1 percent white shell fragments; and 1 percent brown chert and dark subrounded to subangular minerals (pyribole). No iron oxide staining	22.5	2,137.5
Clay, silty light brownish-gray; about 55 percent light-brown clay; 44 percent subangular to subrounded milky and clear quartz grains; and 1 percent dark minerals, minor amounts of hematite, and white shell fragments. No iron oxide staining present	27.5	2,187.5
Same as above, except that it is lighter in color and the quartz is finer grained	22.5	2,227.5
Sand, fine to coarse, argillaceous, light brownish-gray; 60 percent subangular to subrounded clear and milky quartz; 35 percent gray clay and alkali (subrounded to rounded) feldspar (some potash), the clay cementing grains of quartz together in some cases; about 4 percent subrounded dark (pyroxene and amphibole) minerals; and 1 percent dark-blue and brown chert grains. A minor amount of apparently organic plant remains is present as both black and light-brown material	22.5	2,250.0
Sand, medium, light-gray; 97 percent subrounded clear and milky quartz; 2 percent subrounded alkali feldspar; and 1 percent dark (pyribole) minerals, limonite, hematite, and a little magnetite. A small amount of iron oxide staining	22.5	2,272.5
Sand, coarse to gravelly, light-gray; 94 percent subrounded to rounded clear, milky, and a little pink quartz; 3 percent subangular alkali feldspar; 2 percent brown and red to greenish chert; and 1 percent dark minerals, hematite, limonite, and magnetite. Small amount of iron oxide staining. Poorly sorted	22.5	2,295.0
Sand, fine, very light-gray; 97 percent subrounded to rounded clear, milky, and pink quartz; 2 percent subangular to subrounded dark (amphibole) minerals; and 1 percent subrounded to subangular feldspar (chiefly alkali). Minor amounts of green apatite, epidote, and brown to black magnetite are present. Iron oxide staining on about 3 percent of quartz grains	22.5	2,340.0
Same as above, but slightly coarser	22.5	2,362.5
Same as above, but iron oxide staining on about 10 percent of quartz grains	22.5	2,385.0
"2,400-foot" (?) sand:		
Sand, coarse to very coarse, silty, light brownish-gray; about 96 percent subangular to subrounded clear and milky quartz, almost all of		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-468—Continued

	Thickness (feet)	Depth (feet)
Miocene deposits:		
"2,400-foot (?) sand—Continued		
the grains being partially covered by an olive-gray silt; about 2 percent subrounded to angular feldspar (principally alkali); and 2 percent subrounded dark (pyribole) minerals and brown chert. If present, iron oxide staining not distinguishable due to silty coating on quartz. White or transparent organic matter present	45.0	2,430.0

Well EB-534

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"400-foot" sand:		
Sand, medium, yellowish-gray; 97 percent rounded to subrounded clear and milky quartz; 2 percent subrounded alkali feldspar; and 1 percent dark (amphibole) subrounded to subangular minerals and magnetite. Fairly well sorted sand. Iron oxide staining negligible	25	325
Same as above. No iron oxide staining	25	350
Same as above. Minor amount of iron oxide staining	25	375
Same as above. About 4 percent feldspar. Little iron oxide staining	16	391
Sand, fine-grained, light-gray. No iron oxide staining. 95 percent subrounded to subangular milky to clear quartz; 4 percent subrounded alkali feldspar; and 1 percent subrounded dark minerals (amphibole), some apatite present	40	483
"600 foot" sand:		
Sand, coarse to gravelly, variegated color; 70 percent subrounded clear and milky quartz; 10 percent subrounded alkali feldspar; and 20 percent subrounded chert. No iron oxide staining	60	543
Same as above with some pink potash feldspar	52	595
Sand, fine "salt-and-pepper", yellowish-gray; 98 percent subrounded clear quartz; and 2 percent subangular dark minerals, chiefly amphibole. Some iron oxide staining	20	624
Sand, medium, "salt-and-pepper", yellowish-gray; 97 percent subrounded clear quartz; 1 percent alkali feldspar; and 2 percent dark minerals (amphibole). Iron oxide staining noticeable	20	644
Sand, medium, "salt-and-pepper', grayish-orange pink; 96 percent subrounded to rounded clear, milky, and pink quartz; 2 percent subangular to subrounded alkali and potash feldspar; and 2 percent subrounded dark minerals—amphibole, magnetite, and hematite. Minor iron oxide staining	12	656
Same as above with fine to medium, "salt-and-pepper" sand	12	668
Sand, very fine, "salt-and-pepper", light-gray; 96 percent subangular to subrounded clear, milky, and pink quartz; 2 percent subrounded alkali feldspar; and 2 percent subrounded black amphibole. No iron oxide staining	10	795
Sand, very fine, light-gray. No iron oxide staining. 79 percent subrounded clear and milky quartz; 20 percent subrounded alkali feldspar; and 1 percent dark minerals (amphibole)	10	805
"800-foot" sand:		
Sand, very fine, "salt-and-pepper", light-gray; 96 percent subangular to subrounded clear, milky, and pink quartz; 2 percent subrounded		

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-534—Continued

	Thickness (feet)	Depth (feet)
Pleistocene deposits:		
"800-foot" sand—Continued		
alkali feldspar; and 2 percent subrounded black amphibole. No iron oxide staining	11	845
Sand, coarse to very coarse, grayish-orange pink; 85 percent subrounded to rounded clear and milky quartz; 5 percent subangular to subrounded alkali and potash plagioclase; and 10 percent subangular chert. No iron oxide staining	10	855
Sand, coarse, very light-gray; 60 percent subrounded to rounded milky and clear quartz; 15 percent subrounded alkali feldspar; and 25 percent subangular to subrounded chert. No iron oxide staining	10	865
Sand, medium to gravelly, very light-gray; 70 percent subrounded to rounded milky and clear quartz; 10 percent subrounded alkali feldspar; 19 percent subangular to subrounded chert; and 1 percent magnetite. No iron oxide staining	13	878
Same as above but more gravelly	7	885
Same as above but finer grained	11	896
"1,200-foot" sand:		
Sand, medium-grained, light brownish-gray; 92 percent rounded to subrounded clear and milky quartz; 6 percent subrounded to rounded alkali feldspar; 1 percent pyribole; and 1 percent brownish-yellow magnetite cementing and staining quartz grains	15	1,140
Sand, medium to fine, "salt-and-pepper", light-gray; 98 percent subangular to subrounded clear and milky quartz; 1 percent subrounded alkali feldspar; and 1 percent subrounded dark mineral (pyribole). Iron oxide staining	82	1,222
Same as above except coarser (medium grained)	5	1,227
"1,700-foot" sand:		
Sand, medium, light brownish-gray. Iron oxide staining. 98 percent subangular to subrounded clear and milky quartz; 1 percent subrounded alkali feldspar; and 1 percent dark minerals—amphibole and magnetite. Cementing agent: black asphaltic-appearing substance	5	1,713
Sand, coarse-grained, light brownish-gray. Iron oxide staining. 97 percent subrounded to rounded milky and clear quartz; 2 percent subrounded alkali feldspar; and 1 percent pyribole and magnetite	11	1,724
Same as above but has black asphaltic-like cementing agent	10	1,734
Same as above but lacks black cementing material	11	1,745
Same as above but has black asphaltic material	11	1,756
Same as above but no black cementing material	9	1,765
Same as above but slightly finer grained	15	1,780
Sand, medium, light brownish-gray; 98 percent subrounded to rounded clear and milky quartz; 1 percent subrounded to subangular alkali feldspar; and 1 percent subrounded pyribole and magnetite. Iron oxide staining	12	1,792
Miocene deposits		
"2,000-foot" sand:		
Sand, medium to fine, very light-gray; 99 percent subangular to subrounded clear and milky quartz; and 1 percent subrounded alkali feldspar and pyribole. Some magnetite	10	1,905

Table 3.—*Description of drill cuttings from wells in the Baton Rouge area*—Continued

Well EB-534—Continued

	Thickness (feet)	Depth (feet)
Miocene deposits:		
"2,000-foot" sand—Continued		
Same as above but more magnetite	10	1,915
Sand, medium to fine, very light-gray; 99 percent subangular to subrounded clear and milky quartz; and 1 percent subrounded alkali feldspar and pyribole. Some magnetite	15	1,930
Same as above but more (up to 3 percent) feldspar	46	1,976
Same as above with less feldspar, presence of a little pink quartz and coarser (medium to coarse) grained	12	1,988
Same as above but coarser (up to coarse) grained	22	2,010
Sand, medium, very light- to light-gray; 98-99 percent subangular to subrounded clear, milky, and some pink quartz; and 1-2 percent subrounded alkali feldspar and pyribole. Little iron oxide staining	15	2,025
Same as above but more dark minerals	12	2,037
Same as above, a little (about 1 percent) chert present	22	2,059
Sand, fine, "salt-and-pepper", light- to yellowish-gray; 98 percent subrounded clear, milky, and a little pink quartz; 1 percent subrounded pyribole; and 1 percent alkali feldspar, chert, epidote, and a very little magnetite	16	2,075
Same as above but about 1 percent brown chert present	9	2,128
"2,400-foot" sand		
Sand, argillaceous, fine, light olive-gray; 30 percent and feldspar (alkali and potash), 68 percent subrounded clear and milky quartz, 1 percent subrounded pyribole, and 1 percent yellowish-brown magnetite which stains and cements quartz grains	20	2,390
"2,800-foot" sand:		
Sand, coarse, yellowish-gray; 98 percent subrounded to rounded clear and milky quartz; 1 percent subrounded alkali feldspar; and 1 percent subangular to subrounded pyroxene, epidote, and chert. No iron oxide staining	24	2,749
Same as above, but coarser (coarse to very coarse) grained and quartz grains subangular	11	2,760
Same as above but about 2 percent dark (pyroxene) minerals, epidote, and chert	11	2,771
Sand, coarse, yellowish-gray; 97 percent subrounded to rounded clear and milky quartz; 1 percent subrounded alkali feldspar; and 2 percent subangular to subrounded pyroxene, epidote, and chert. No iron oxide staining	12	2,783
Same as above, slightly finer grained	25	2,808

PUMPING TESTS

Table 4.—*Summary of permeability, transmissibility, and*

Well	Owner	Aquifer tested	Effective sand thickness (feet)
EB-501	Esso Standard Oil Co.	Recent	125
EB-526	do	do	125
EB-529	do	do	90
EB-531	do	do	125
EB-532	do	do	75
EB-533	do	do	124
EB- 78	Solvay Process Div., Allied Chem. and Dye Corp.	"400-foot"	130
EB-356[2]	Esso Standard Oil Co.	do	130
EB-360[2]	Ethyl Corp	do	160
EB-362	do	do	145
EB-362	do	do	145
EB-458	Esso Standard Oil Co.	do	145
EB-458	do	do	145
EB-463	do	do	135
EB-463	do	do	135
EB-506	do	do	135
EB-506	do	do	135
EB-359	Ethyl Corp	"600-foot"	120
EB-359	do	do	120
EB-473[3]	Esso Standard Oil Co.	do	202
EB-490	do	do	205
EB-490	do	do	205
EB-467	General Chem. Div., Allied Chem. and Dye Corp.	"800-foot"	90
EB-403[2]	Esso Standard Oil Co.	"1200-foot"	150
EB-535[2]	Copolymer Corp	do	100
EB- 68	Ethyl Corp	"1700-foot"	130
EB- 70	do	"2000-foot"	190
EB- 70	do	do	190
EB- 71	do	do	190
EB- 71	do	do	190
EB- 72[2]	do	do	190

[1]Calculated from data obtained from Esso Standard Oil Co.
[2]Pumped well.
[3]Well EB-354 used as pumped well in drawdown phase.

storage coefficients as determined by pumping tests

Field coefficient of transmissibility (gpd/ft)	Field coefficient of permeability (gpd/ft²)	Coefficient of storage	Duration (minutes)	Pumping-test method
[1]140,000	[1]1,120	[1]0.001	2,468	Drawdown interference.
[1]170,000	[1]1,360	[1].02	2,726	Do.
[1]140,000	[1]1,560	[1].01	2,714	Do.
[1]200,000	[1]1,600	[1].0009	2,669	Do.
[1]210,000	[1]2,800	[1].01	2,832	Do.
[1]170,000	[1]1,370	[1].001	1,029	Do.
43,000	330	.00062	200	Recovery interference.
36,000	275	....	1,345	Recovery.
77,000	480	....	370	Do.
76,500	530	.00095	1,300	Drawdown interference.
76,000	530	.00097	337	Recovery interference.
[3]52,000	[3]360	[3].00037	1,330	Drawdown interference.
48,000	330	.00032	355	Recovery interference.
38,000	280	.00031	361	Do.
42,500	325	.00032	265	Drawdown interference.
32,000	240	.00030	242	Do.
34,000	255	.00026	1,335	Recovery interference.
96,000	800	.00041	1,180	Drawdown interference.
95,000	790	.00034	208	Recovery interference.
123,000	610	....	190	Recovery.
121,000	590	.00057	1,215	Drawdown interference.
114,000	555	.00054	180	Recovery interference.
24,000	270	....	210	Recovery.
79,000	525	....	177	Do.
126,000	1,260	....	180	Do.
32,000	245	....	270	Do.
289,000	1,520	.00079	251	Drawdown interference.
243,000	1,280	.00071	1,350	Recovery interference.
243,000	1,290	.00057	249	Drawdown interference.
209,000	1,100	.00062	1,374	Recovery interference.
210,000	1,110	....	1,360	Recovery.

DESCRIPTION

The records of wells in table 5 are based on information obtained and accuracy. The wells are located as accurately as possible, longer visible and can be located only approximately. Wells not be approximated within a reasonable distance are not

Table 5.—*Description of wells*

[Well locations shown on plate 3, figures 13 and 21. Figures in the water-level column represent measured static water level, all other figures are reported static water levels. Symbol "b" N, not in use; O, observation; A, abandoned; T, test. Remarks column: L, driller's log in

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton
1	1	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1915
2	2	do	do	1914
3	3	do	do	1914
4	4	do	do	1924
5	5	do	do	1924
6	6	do	do	1924
7	7	do	do	1924
8	8	do	do	1925
9	9	do	do	1925
10	10	do	do	1925
11	11	do	do	1925
12	12	do	do	1926
13	13	do	do	1926
14	14	do	do	1926
15	15	do	do	1927
16	16	do	do	1927
17	17	do	do	1928
18	18	do	do	1928
19	19	do	do	1928
20	20	do	do	1928
21	21	do	do	1929
22	22	do	do	1929
23	23	do	do	1929
24	24	do	do	1929
25	25	do	do	1929
26	26	do	do	1929
27	27	do	do	1929
28	28	do	do	1929
29	29	do	do	1929

See footnote at end of table.

OF WELLS

from many sources and are of different degrees of completeness but many of the old wells in the Baton Rouge industrial area are no for which records are incomplete or for which the location can-included.

in the Baton Rouge area

the distance below land-surface datum unless shown with a plus sign; the symbol "a" indicates (yield column), flowing yield. Use column: I, industrial; S, stock; D, domestic; P, public; table 6; C, chemical analyses for water collected from well in table 1 or 2]

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Rouge Parish						
461	390-450	550	42	—— 1915	N	
437	344-444	1,600	44	—— 1914	N	
433	347-427	....	44	May 1914	A	
692	337-438 532-692	....	59 a179	June 1924 June 1952	O	
703	336-436 536-697	1,652	77	Aug. 1924	N	
704	335-436 541-701	1,460	76	Oct. 1924	A	
692	338-438 528-628	1,541	67	Dec. 1924	N	
698	345-445 526-692	1,592	64	Jan. 1925	A	
701	350-440 530-690	....	69	May 1925	A	
710	340-440 543-705	1,592	85	July 1925	A	
720	322-422 560-720	1,592	83	Dec. 1925	A	
698	313-414 538-698	1,652	67	Jan. 1926	N	
689	335-437 521-683	1,723	62	Feb. 1926	N	
704	335-430 528-697	1,592	76	Apr. 1926	A	
682	320-420 511-679	1,400	110 a155	Aug. 1927 Apr. 1953	O	
1,574	1,202-1,267 1,485-1,567	500	+25	Sept. 1927	A	L.
1,567	1,191-1,270 1,492-1,554	421	+15	Jan. 1928	A	
671	324-424 511-671	1,522	75	Mar. 1928	N	C.
668	244-344 507-668	1,592	72	Apr. 1928	N	
665	334-434 503-665	1,490	71 a155	May 1928 Apr. 1963	O	
686	304-424 505-686	1,322	91	Apr. 1929	N	
701	320-440 556-697	1,555	84	May 1929	O	
679	304-424 497-679	1,592	83	June 1929	N	
696	325-445 514-675	1,200	98	Mar. 1929	N	
684	328-448 512-684	1,458	91	Apr. 1929	A	
688	314-434 507-688	1,400	79	May 1929	N	
686	330-430 526-686	948	133	July 1929	A	
1,608	1,201-1,280 1,500-1,600	....	+11 a48	Aug. 1929 Apr. 1953	O	L.
1,640	1,152-1,287 1,594-1,640	198	+9	Oct. 1929	A	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge,
31	31	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1930
32	32	do	do	1936
33	33	do	do	1938
34	34	do	do	1938
35	35	do	do	1940
36	36	do	do	1940
37	37	do	do	1941
38	38	do	do	1942
39	39	do	do	1913
40	....	do	do	1915
42	2-B	do	do	1909
43	3-B	do	do	1909
44	4-B	do	do	1909
45	5-B	do	do	1910
46	6-B	do	do	1910
47	7-B	do	do	1910
48	8-B	do	do	1910
49	9-B	do	do	1910
50	10-B	do	do	1911
51	11-B	do	do	1911
52	12-B	do	do	1911
53	13-B	do	do	1915
54	14-B	do	do	1915
55	1	Ethyl Corp.	T. 6 S., R. 1 W.	1937
56	2	do	do	1937
57	3	do	do	1937
58	4	do	do	1937
59	5	do	do	....
60	6	do	do	1939
61	7	do	do	....

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
696	340-460 516-696	1,130	150	Aug. 1930	N	L.
459	328-428	1,780	...	...	A	L.
676	308-330 353-433 548-676	1,100	150	Aug. 1938	I	L.
450	324-450	1,100	142	June 1938	I	
715	342-410 484-570 582-715	1,000	151	Mar. 1951	A	
705	333-417 489-705	1,000	158	Dec. 1940	I	
676	266-420 513-673	663	...	...	N	
684	290-433 503-666	1,000	104	May 1941	A	
1,575	1,112-1,150 1,481-1,575	...	...	...	A	L.
1,287	1,240-1,280	...	+42	—— 1915	A	
402	342-402	500	...	...	A	
689	340-400 557-578 599-678	1,000	...	...	A	
405	324-405	750	...	...	A	
665	557-662	1,200	9 [a]81	May 1910 May 1948	A	
407	307-405	1,500	...	...	A	
914	602-685 820-904	1,090	...	...	A	
424	316-424	1,500	...	...	A	
690	558-690	990	...	...	A	
880	570-675 804-880	900	...	...	A	
886	538-666 826-886	1,002	75	Mar. 1928	A	
880	550-715 830-880	1,007	...	...	N	
414	290-404	1,500	81 [a]153	Sept. 1915 Sept. 1943	N	
676	278-390 588-676	1,775	...	...	N	
660	226-291 313-409 598-660	860	191	Feb. 1951	I	L.
688	305-329 341-403 496-511 529-539 561-603 624-687	770	180	Feb. 1952	I	
665	229-274 319-416 601-667	770	196	Apr. 1952	I	
666	232-274 304-327 334-355 378-451 589-666	890	141	Jan. 1952	I	
1,191	290-344 356-420 585-608 615-666	...	...	...	N	
644	498-530 541-644	1,000	218	Sept. 1951	I	C.
660	282-328 348-390 529-659	1,060	112	Apr. 1952	I	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
62	8	Ethyl Corp.	T. 6 S., R. 1 W.	1939
63	9	do	do	1939
64	10	do	do	1939
65	11	do	do	1939
66	12	do	do	1939
67	13	do	do	1940
68	14	do	do	1940
69	15	do	do	1940
70	16	do	do	1940
71	17	do	do	1940
72	18	do	do	1940
73	1-F	Solvay Process Div., Allied Chem. and Dye Corp.	do	1934
74	1-P	do	do	1935
75	2-P	do	do	1935
76	3-P	do	do	1935
77	4-P	do	do	1936
78	5-P	do	do	1936
79	6-P	do	do	1937
80	7-P	do	do	1937
81	8-P	do	do	1938
82	1	Gulf States Utilities Co.	do	1930
83		do	T. 7 S., R. 1 W.	1916
84	1	Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1927
85	2	do	do	
86	10	do	do	1933
87	14	do	do	
88	9	do	do	
89	3	do	do	1927
90	8	do	do	1931
91	13	do	do	1927
92	11	do	do	1936
93	16	do	do	
94	5	do	do	1928
95	4	do	T. 7 S., R. 1 W.	
96	12	do	do	1939
97	6	do	do	1916
98	10	do	do	
99	11	do	do	

See footnote at end of table.

the Baton Rouge area—Continued

Parish—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
659	295-315 322-406 574-657	430	163	Apr. 1952	I	
643	279-395 514-643	790	135	Apr. 1952	I	
665	278-411 588-665	810	140	Apr. 1952	I	
661	278-411 584-661	670	145	Apr. 1952	I	
656	267-289 298-384 504-656	910	143	Mar. 1952	I	
2,037	1,967-2,037	1,030	65	June 1944	I	
1,817	1,684-1,817	1,245	[a]66	Jan. 1953	I	C.
2,141	1,686-1,802 1,932-2,141	1,130	53	Apr. 1952	I	C.
2,075	1,912-2,075	1,230	[a]51	Jan. 1953	I	C.
2,132	1,934-2,062 2,090-2,132	1,030	[a]53	Jan. 1953	I	L.
2,126	1,910-2,056 2,085-2,126	1,340	[a]47	Jan. 1953	I	
1,825	1,725-1,825	850	100	Oct. 1945	A	L.
440	306-326 340-386	1,000	90 [a]134	Feb. 1935 Feb. 1943		
420	334-414	1,000	[a]90	Jan. 1935	N	
405	310-350 360-400	1,000	55	Feb. 1935	N	
571	468-570	800	80	May 1936	N	
425	332-423	700	193	Apr. 1953	O	
664	310-345 385-435 554-664	530	....	....	N	
417	313-413	1,500	88	June 1937	I	
440	324-424	460	....	....	I	
2,056	1,972-2,056	460	[a]+35 [a]+6	Mar. 1940 Mar. 1941		
1,821	1,540-1,564 1,680-1,692 1,800-1,821	....	[a]+14 [a]30	Feb. 1943 Feb. 1948	N	At old power-house.
1,595	1,488-1,592	550	+6	Jan. 1927	A	
2,192	2,045-2,150	....	5	Mar. 1945	A	
2,195	2,044-2,186	....	+50	June 1939	P	
1,620	1,531-1,617	....	1	Oct. 1944	P	
2,142	2,021-2,142	....	3	Apr. 1945	A	
1,612	1,505-1,605	....	+4	Apr. 1945	O	
2,125	2,025-2,120	....	[a]4 [a]29	Apr. 1945 Apr. 1953	O	
1,608	1,516-1,599	433	[a]+4 [a]+9	May 1943 Apr. 1945	P	
2,226	2,038-2,224	....	[a]+2	Apr. 1945	P	L.
2,578	2,457-2,495 2,510-2,572	500	[a]+2	Oct. 1944	N	
1,599	1,498-1,598	....	[a]+9	Apr. 1945	A	
2,185	1,350-1,390 2,125-2,185	....	[a]15	Aug. 1943	A	
2,254	2,068-2,090 2,135-2,178 2,188-2,203 2,217-2,227 2,233-2,254	2,000	+53	Apr. 1939	P	
2,059	1,993-2,063	....	+105 +52	—— 1916 June 1939	A	
328	190-328	2,000	....	....	P	
338	188-329	1,900	....	....	P	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
100	13	Baton Rouge Water Works Co.	T. 7 S., R. 1 W.	
101	1	do	T. 6 S., R. 1 W.	1919
102		Mr. Cotton	T. 7 S., R. 1 E.	1939
103		Baton Rouge Water Works Co.	T. 7 S., R. 1 W.	1920
104		do	T. 6 S., R. 1 W.	
105		do	T. 6 S., R. 1 E.	1921
106		do	do	1920
107		Coca Cola Bottling Co.	T. 7 S., R. 1 W.	1937
108		do	do	1920
109		Baton Rouge Ice Co.	do	1925
110		do	do	
111		Kean's Laundry	do	1917
112		do	do	1930
113		do	do	1924
114-A		Cotton's Bakery	do	1928
114-B		do	do	1939
115		People's Laundry	T. 7 S., R. 1 W.	1928
116		Istrouma Laundry	T. 6 S., R. 1 W.	1937
117		Westdale Country Club	T. 7 S., R. 1 E.	1928
118		Lady of the Lake Sanitarium	T. 7 S., R. 1 W.	1922
119	1	Illinois Central R. R.	do	1939
120	2	do	do	1939
121		Oak Grove Dairy	do	1920
122	1	City of Baton Rouge	do	1925
123	2	do	do	1935
124		People's Ice and Fuel Co.	do	1936
125		do	do	1932
126	1	Rock Ice Co.	do	1933
127	2	do	do	1940
128		Ice Service Co.	do	1921
129		United Ice Co.	do	1930
130		Henry Jolly	T. 7 S., R. 1 E.	1920
131		Standard Ice Box Co.	T. 7 S., R. 1 W.	1920
132		Schuykill Products Co.	T. 6 S., R. 1 W.	1940
133	15	Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1941
134		American Legion	T. 7 S., R. 1 W.	1919
135		A. Dunn	T. 6 S., R. 1 E.	1938
136		A. A. Edgens	T. 4 S., R. 1 E.	1936
137		J. C. Austin	T. 6 S., R. 1 E.	1940
138		Boy Scouts of America	T. 5 S., R. 2 E.	1938
139		do	do	1944
140		J. T. Guerney	T. 5 S., R. 1 E.	1940
141		B. B. Formand	do	1936
142		P. Guerney	T. 4 S., R. 1 E.	1939
143		Baton Rouge Electric Co.	T. 7 S., R. 1 W.	1917
144		L. R. Williams	T. 7 S., R. 1 E.	1936
145		F. Webb	do	
146		City of Baton Rouge	T. 7 S., R. 1 W.	1916
147		C. Stumberg	T. 7 S., R. 2 E.	1937
148		M. M. Hughes	T. 6 S., R. 1 W.	1935
149		L. McClure	T. 5 S., R. 1 W.	1938
150	1	Baton Rouge Water Works Co.	T. 7 S., R. 1 E.	
151	2	do	do	

See footnote at end of table.

the Baton Rouge area— Continued

Parish— Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
343	262-338	2,000	...	...	P	C.
1,502	1,440-1,502	...	+10	Apr. 1945	A	
452	387-407	...	23	Jan. 1939	D	
1,556	1,464-1,556	...	+30	June 1939	P	
1,400	...	...	...	...	A	
1,464	1,404-1,464...	100	+52	Mar. 1921	A	
1,472	1,412-1,472...	100	...	...	P	
451	411-451	300	...	...	I	
450	...	...	...	...	A	
893	850-890	1,200	38	Apr. 1925	N	
200	...	...	...	...	A	
1,274	1,230-1,270	...	+51	June 1917	A	
2,255	2,170-2,250	...	+34	Sept. 1940	I	
1,242	1,200-1,241	...	+19	Nov. 1924	A	
723	663-723	...	76	Nov. 1928	I	
982	922-982	...	76	Nov. 1939	I	
856	796-850	125	35 88	Sept. 1928 Sept. 1940	I	
2,151	2,120-2,160	...	+55	Oct. 1937	I	L.
1,402	1,320-1,400	475	+64 [a]15	June 1928 Apr. 1953	O	L.
2,108	2,022-2,105	120	+80	Oct. 1940	A	L.
948	905-945	150	...	...	I	
946	905-946	360	88	Jan. 1945	I	C.
1,570	1,510-1,570	...	...	...	I	L.
750	590-750	...	...	...	N	L.
729	590-729	750	52	Apr. 1935	N	Water brackish, July 1950.
608	585-605	400	96	Aug. 1936	N	
744	660-740	...	70 [a]141	Aug. 1936 Aug. 1952	A	
634	550-630	50	67	—— 1933	N	
400	233-328	475	...	...	A	
412	350-410	...	89 [a]92	Aug. 1940 Mar. 1953	O	
748	645-710	75	88	Sept. 1930	N	C.
1,147	...	...	...	...	D	L.
1,314	1,261-1,314	...	...	...	I	L, originally drilled to 1373 ft.
1,980	...	...	30	—— 1940	I	L.
2,553	2,028-2,164 2,482-2,553	1,000	...	...	P	L, originally drilled to 2710 ft.
2,186	2,106-2,141 2,143-2,184	[b]320	+10	Oct. 1941	P,N	
1,429	1,380-1,429	...	+35	May 1938	D	L.
1,300	...	...	+22	Nov. 1936	D,S	L.
997	970-990	...	+23	Aug. 1940	D	
1,192	...	...	[a]+21	Aug. 1944	P	L.
1,217	1,170-1,210	[b]65	+23	Aug. 1944	P	
175	160-172	...	28	June 1940	D	
165	153-165	...	23	Sept. 1936	D	
1,170	1,150-1,166	...	+25	Jan. 1944	D	L.
1,239	1,180-1,230	[b]160	+43	—— 1917	A	
620	558-620	...	29	Sept. 1936	D	
1,210	1,190-1,210	...	...	...	D	
1,262	1,200-1,260	[b]220	+33 0.1	Mar. 1916 Jan. 1948	I	L.
1,080	...	...	+10	Jan. 1937		
1,349	1,320-1,348	...	...	...	D	L.
1,280	...	...	...	...	D	L.
2,648	2,069-2.110 2,176-2,276 2,563-2.643	1,080	+5	Aug. 1944	P	L
2,669	2,157-2,277 2,570-2,664	1,100	+6	Aug. 1944	P	C

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
152	1	Baton Rouge Water Works Co.	T. 6 S., R. 1 W.	1919
153	2	do	do	1919
154	3	do	do	1942
155	47	Esso Standard Oil Co.	do	1944
156		M. Kahn	T. 7 S., R. 1 E.	1918
157		do	do	1943
158		W. R. Dodson	do	1917
159		W. C. Fleming	do	1925
160		State of Louisiana	T. 6 S., R. 1 W.	1920
161		do	do	1914
162		do	do	1922
163		do	do	1939
164		Carl Kennedy	T. 6 S., R. 1 E.	
165		do	do	
166		Baton Rouge Water Works Co.	T. 7 S., R. 1 W.	1944
167		do	T. 6 S., R. 1 W.	1943
168		do	do	1943
169		Owen Day	T. 6 S., R. 1 E.	
170		City of Baton Rouge	do	1941
171		do	do	1941
172		do	T. 5 S., R. 1 E.	1942
173		Russell Taylor	T. 4 S., R. 1 E.	1930
174		C. Spillman	T. 6 S., R. 1 E.	1944
175		A. G. Kelleher	do	1944
176		A. E. Statum	do	1944
178		Mr. Cowen	do	
179		Mr. LeBlanc	T. 7 S., R. 1 E.	1937
180		H. B. Harelson	do	1937
181		do	T. 7 S., R. 2 E.	1939
182		G. Morgan	T. 6 S., R. 2 E.	1937
183		Mr. Cowell	do	
184		Mr. Phillips	T. 7 S., R. 1 E.	1936
185		Mr. Armstrong	do	1940
186		W. Shaws	T. 6 S., R. 2 E.	1939
187		A. P. Walsh	do	1939
188		Mr. Sharp	T. 7 S., R. 1 E.	1938
189		T. Hunt	T. 5 S., R. 1 E.	1938
190		W. F. Owens	T. 5 S., R. 1 W.	1941
191		Mr. Baker	T. 4 S., R. 1 W.	1941
192		Mr. Wilson	T. 7 S., R. 2 E.	1938
193		H. Nelson	T. 4 S., R. 1 W.	1936
194		R. P. Easterly	do	1941
195		J. East	do	1940
196		G. Paulot	T. 8 S., R. 1 E.	
197		do	do	
198		do	do	
199		J. Thomas	T. 7 S., R. 1 W.	1938
200		do	do	1939
201		V. Gianelloni	T. 8 S., R. 1 E.	1920
202		do	do	
204		L. R. Kleinpeter	T. 8 S., R. 2 E.	1937
205		A. B. Hagen	do	1914
206		do	do	
207		do	do	1937
208		J. C. Galey	do	1936
209		7th Ward School	T. 7 S., R. 2 E.	
213		N. Russo	T. 8 S., R. 1 E.	1935
214		H. D. Schwing	do	1932
215		J. Lindsay	do	1936
216		Unknown	do	
217		W. B. Cason	do	
218		W. E. Hornsby	do	

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
1,532	1,465-1,530	[b]100	+46	—— 1919	N	
1,562	1,470-1,506 1,512-1,520 1,523-1,529 1,531-1,562	[b]80	+45	—— 1924	N	
2,434	2,323-2,425	225	15	Aug. 1944	N	L.
412	311-412	944	....	....	I	C.
1,206	1,160-1,200	[b]50	+28	June 1918	D	L.
1,555	1,510-1,552	[b]150	+23	May 1944	D	
1,244	1,180-1,240	[b]80	....	....	D	
790	730-790	....	40	Mar. 1925	I	
1,014	970-1,010	[b]80	+28 [a]26	July 1921 Apr. 1953	O	
989	945-985	....	....	....	N	
978	935-975	[b]50	....	....	N	
977	945-975	[b]125	+8	Dec. 1939	N	
1,800	....	....	[a]+10	Oct. 1944	A	
1,400	....	....	[a]+11	Aug. 1944	A	
1,060	995-1,058	400	55	July 1944	N	
1,218	1,130-1,196	550	+2	Nov. 1943	P	
1,496	1,410-1,490	[b]275	+14	Mar. 1943	N	
1,800	....	....	+17	Sept. 1944	N	
1,382	1,268-1,370	250	+22	Aug. 1941	N	L.
1,389	1,287-1,387	345	+19	Aug. 1941	N	
244	219-240	....	55	Oct. 1942	P	
1,052	1,030-1,050	....	10	Sept. 1944	D	L.
290	262-290	....	....	....	D	
275	250-270	....	44	Sept. 1944	D	
346	319-336	....	....	....	D	
1,287	1,267-1,287	....	....	....	D	
479	458-478	....	18	Dec. 1937	D	
1,004	980-1,000	....	3	Dec. 1937	D	
445	429-445	....	9	Feb. 1939	D	
317	300-315	....	5	Nov. 1937	D	
70	56-70	....	18	Jan. 1938	D	
432	382-432	....	16	Aug. 1936	D	
365	345-365	....	22	Feb. 1940	D	
386	366-386	....	....	....	D	
1,320	1,300-1,320	....	....	....	D	L.
440	422-440	....	15	Mar. 1938	D	
144	124-144	....	20	Mar. 1938	D	
1,878	1,850-1,872	....	46	Oct. 1941	D	L.
145	....	....	....	....	D	
468	444-466	....	5	Oct. 1938	D	
161	140-160	....	51	Dec. 1936	D	
1,912	1,890-1,910	[b]22	....	....	D	L.
198	188-198	....	60	—— 1940	D	
720	....	....	....	....	N	Water brackish.
1,380	....	....	....	....	N	Water brackish.
1,650	....	....	....	....	N	Water brackish.
320	....	....	....	....	D	
236	224-236	....	21	May 1939	D	
....	....	....	....	....	D, A	
250	225-250	....	....	....	S	
400	360-400	10	13	—— 1937	D	
1,785	1,760-1,784	[b]30	....	....	D	L, water brackish.
675	667-675	....	15	July 1940	A	
372	364-372	....	18	—— 1940	S	
650	....	....	....	....	D	
400	....	....	0	—— 1940	P	
400	380-400	....	....	....	A	
250	225-250	....	21	May 1942	D	
355	330-355	....	....	....	S	
....	....	....	....	....	D	
125	80-125	....	....	....	D	
300	....	....	....	....	S	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no	Company no.	Owner	Location	Date completed
				East Baton Rouge
219		R. W. Aldrich	T. 7 S., R. 1 E.	
220		S. H. Cook	do	1942
221		L. E. Morgan	do	1940
222		L. Gates	do	1933
223		L. E. Morgan	do	1917
224		H. W. Miller	do	1936
225		A. Hall	do	
226		C. A. McHardy	do	1927
227		S. J. Kean	do	1917
229		Louisiana State Univ.	T. 7 S., R. 1 W.	
230		Lorette Dairy	do	
231		do	do	
232		Mr. DuPlantier	T. 8 S., R. 1 W.	
233		H. Boyer	do	
235		J. Bailey	do	1940
236		do	do	1940
237		Louisiana State Univ.	T. 7 S., R. 1 W.	1928
238		do	do	
239		do	do	1910
240		do	do	
241		do	do	1922
242		do	T. 8 S., R. 1 W.	
243		do	do	
244		do	do	
245		L. Bird	T. 8 S., R. 1 E.	1927
246		V. Triche	do	
247		J. B. Comeaux	do	
248		H. G. Rogers	do	
249		G. H. Baker	do	
250		D. Denicola	T. 8 S., R. 1 E.	
251		A. H. Chidester	do	
252		W. W. Pecue	do	
253		B. Harris	do	
254		L. S. Easterly	T. 8 S., R. 2 E.	1939
255		T. O. Foreman	do	1913
256		S. J. Gianelloni	T. 8 S., R. 1 E.	
257		do	do	1917
258		do	do	1922
259		A. Gianelloni	do	1898
263		S. J. Gianelloni	do	1925
265		Baton Rouge Country Club	T. 7 S., R. 1 E.	1916
266		S. L. Jacobs	T. 6 S., R. 1 E.	1926
268		E. Brown	T. 7 S., R. 1 E.	1936
269		W. H. Perkins	do	
271		B. B. Turner	do	1919
272		I. L. Fontenot	do	
273		A. K. McInnis	do	1941
274		E. O. McInnis	do	1921
275		E. W. Doughty	do	1938
276		C. Strait	do	1933
277		A. P. Kerr	T. 7 S., R. 2 E.	
278		R. H. Day	T. 7 S., R. 1 E.	
279		O. S. Labauve	do	
280		Louisiana State Univ.	T. 7 S., R. 1 W.	1932
281-A		do	do	1923
281-B		do	do	1923
282		Town of Zachary	T. 5 S., R. 1 E.	1939
283		do	do	1940
284		J. J. Coon	T. 8 S., R. 1 E.	
287		W. J. Jaycock	T. 4 S., R. 1 E.	
289		Baton Rouge Water Works Co.	T. 6 S., R. 1 W.	1919
290		P. E. Lucas	T. 5 S., R. 1 E.	1940
291		United Gas Pipeline Co.	T. 6 S., R. 1 W.	1927
292		do	do	1935

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level	Date	Use	Remarks
Parish—Continued						
1,274					P	
384	364-384		15	May 1942	D	
368	348-368	10	29	May 1942	D	
600					D	
35		4			D	
638	618-638		19	May 1942	D	
600			19	May 1942	D	
1,275	1,215-1,275	[b]90	+41	Jan. 1927	D	L.
1,300					D	
180	160-180		[a]+1	Apr. 1930	A	
80					N	
80			2	Apr. 1943	A	
175	150-175				D	
100	50-100				S	
160	140-160				S	
190	180-190				S	
180					S, A	
180						
			1	May 1943	A	
200					A	
1,955		[b]120	+32	Nov. 1922	A	
180			5	May 1943	A	
180					A	
180					A	
30			9	May 1943	D	
30					D	
27					D	
34					D	
30					D	
26			10	May 1943	D	
33	23-33				D, S	
450					D	
35					D, S	
620			4	Apr. 1939	D	
350					D, S	
220					N	
220			3	May 1943	D, S	
220		50			D	
200					D	
260					D	
1,191	1,130-1,190	[b]130	+47	Apr. 1916	N	
1,321	1,280-1,320	[b]125	+36	July 1926	D	
463	440-456		30	Apr. 1936	D	
					D	
650					D	
530			25	—— 1941	D	
400					D	
1,434	1,370-1,430	[b]100	+45	May 1921	D	
400			30	—— 1938	D	
476			14	—— 1933	D	
516					D	
500					D	
443			30	—— 1942	D	
985					A	
2,528					T	L.
323	240-320	320	+3	Mar. 1923	P	L.
1,324	1,264-1,300	[b]30	+3	Aug. 1943	P	
1,800	1,760-1,800		+25	Aug. 1943	P	
384	360-380				N	
240	220-240				D	
1,404	1,340-1,400	[b]100	+49 [a]26	Jan. 1919 Apr. 1953	O	
366	350-365		60	Apr. 1940	D	
1,206	1,145-1,205	[b]80	+20	—— 1927	N	
1,200	1,140-1,200	[b]100	+8	Sept. 1940	N	L.

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
293	1	Consolidated Chem. Industries, Inc.	T. 6 S., R. 1 W.	1925
294	2	do	do	1942
295		Wood River Oil and Refining Co.	do	1933
296		do	do	1924
297		Louisiana Dept. of Highways	do	1937
298		R. Ogden	T. 7 S., R. 1 E.	1918
299		Staring and Kirby	do	1920
300		Scheinuk Florist	do	1926
301		H. B. Witter	do	1926
302		H. A. Bozeman	T. 7 S, R. 2 E.	1942
303	1	Greenwell Springs Tuberculosis Hosp.	T. 5 S., R. 2 E.	1936
304	2	do	do	1941
305		I. M. Lee	T. 6 S., R. 1 E.	1940
306		W. W. Bynum	do	1926
307		do	do	1926
308		do	do	1915
309		Town of Baker	T. 5 S., R. 1 W.	1920
310		H. B. Witter	T. 6 S., R. 1 W.	1925
311		Suburban Water Co.	do	1926
312		J. Ross	do	1925
313		East Baton Rouge Parish	do	1940
314		A. A. Morvant	T. 5 S., R. 1 E.	
315		Baton Rouge Water Works Co	T. 6 S., R 1 E.	1938
316		East Baton Rouge Parish	T. 6 S., R. 2 E.	1927
317		H. H. Edwards	do	1935
318		T. Morgan	T. 6 S., R. 1 E.	1939
319		W. H. Carpenter	do	1941
320		C. R. Core	T. 5 S., R. 1 E.	1941
321		J. B. Carney	T. 5 S, R. 1 W.	1937
322		T. E. Charlton	T. 5 S., R. 1 E.	1941
323		Standard Box Co.	T. 7 S., R. 1 W.	1925
324		J. Hill	T. 6 S., R. 2 E.	1944
325		S. A. Wentzel	T. 7 S., R. 1 E.	1936
326		P. Burden	do	1936
327		C. Spedale	do	
328		W. F. Pratt	T. 6 S., R. 1 E.	1939
329		Rev. Colbert	T. 6 S., R. 2 E.	1936
330		G. I. Browning	do	
331		E. J. Buhler	do	1941

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
606	540-600	....	71 [a]180	Dec. 1925 Nov. 1952	O	L.
2,293	2,220-2,290	1,000	+58 [a]77	Sept. 1942 Aug. 1952	I	L.
1,340	1,240-1,340	[b]225	+11 [a]33	Sept. 1933 Apr. 1953	O	
1,403	1,340-1,401	[b]76	+29	Sept. 1924	I	L.
1,904	....	[b]150	+35	—— 1937	N	
1,403	1,360-1,400	[b]50	+38	July 1918	N	
1,245	1,183-1,242	[b]75	+39	June 1920	N	
1,241	1,180-1,240	[b]80	+27	Sept. 1926	D	
1,281	1,216-1,280	....	+35	Aug. 1926	D	
1,340	1,320-1,340	....	[a]+29 [a]+11	Aug. 1942 July 1951	D	L.
1,189	1,145-1,185	[b]180	+36 +11	Nov. 1936 July 1951	P	
1,725	1,680-1,720	....	[a]+69 [a]+52	July 1943 July 1951	P	L.
1,150	....	....	[a]+18 [a]+10	July 1943 Jan. 1947	D	
1,168	1,105-1,166	[b]70	+30 +0.1	May 1925 June 1950	D	
1,166	1,100-1,161	....	+45 [a]+11	Feb. 1926 Jan. 1949	D	
1,174	1,130-1,170	[b]80	+45 [a]+9	—— 1915 Aug. 1944	D	
1,438	1,375-1,435	....	....	....	N	L.
1,395	1,330-1,390	[b]90	+45 [a]+5	Aug. 1925 Nov. 1944	D	
1,498	1,435-1,497	[b]110	+36 [a]+2	Oct. 1926 Mar. 1946	A	
1,370	1,310-1,370	[b]90	+35 [a]25	Feb. 1935 Feb. 1953	O	
391	380-390	....	65	Feb. 1940	P	
1,560	....	....	[a]+30 [a]+6	Aug. 1942 Dec. 1947	D	
1,960	1,920-1,960	....	[a]+29 [a]11	Aug. 1942 Apr. 1953	D	L.
1,171	1,130-1,171	[b]100	+34 [a]+14	Sept. 1927 Jan. 1947	P	
1,176	1,115-1,173	....	+39 [a]+2	—— 1935 July 1951	D	
1,277	1,250-1,275	....	[a]+22 [a]+3	July 1943 July 1951	D	
1,393	1,370-1,390	....	[a]+20 [a]+19	June 1943 June 1944	D	
1,310	....	....	[a]+17 [a]+16	Oct. 1943 Oct. 1944	D	
1,460	1,440-1,460	....	[a]+21 [a]+14	Oct. 1943 Oct. 1944	D	L.
1,970	1,930-1,970	....	[a]+50 [a]+37	Oct. 1943 July 1951	O	
1,317	1,235-1,316	....	[a]+7 [a]39	Apr. 1943 Apr. 1953	O	
1,286	....	....	+31	Jan. 1944		
579	557-577	....	32	Aug. 1936	D	
1,525	....	....	+28	Apr. 1944	D	L.
1,240	....	....	....	....	D	
1,340	....	....	....	....	D	
1,140	1,112-1,140	....	....	....	D, S	L.
936	....	....	....	....	D	
1,118	....	....	....	....	D	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
332		E. J. Buhler	T. 6 S., R. 2 E.	1936
333		J. Friedman	do	1936
334		R. L. Morgan	do	1939
335		Bogan and Gibbs	T. 6 S., R. 1 E.	
336		V. T. Jackson	T. 5 S., R. 2 E.	
337		J. L. Shaffett	do	1939
338		J. J. Gurney	T. 5 S., R. 1 E.	1936
339		A. J. Caston	do	1940
340		L. C. Reames	do	1939
341		W. Wolf	T. 4 S., R. 1 E.	1937
342		C. A. Starks	T. 6 S., R. 1 E.	1937
343		J L. McAdams	do	1937
344		L. R. Babin	do	1942
345		Leland College	T. 5 S., R. 1 W.	1943
346		W. L. Hause	do	1938
347		Tony Graphia	T. 6 S., R. 1 W.	1935
348		R. Rowland	T. 6 S., R. 1 E.	1939
349		do	do	1935
350	39	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1942
351	40	do	do	1942
352	41	do	do	1942
353	42	do	do	1943
354	43	do	do	1943
355	44	do	do	1943
356	45	do	do	1943
357	46	do	do	1944
358		do	do	1941
359	19	Ethyl Corp	do	1943
360	20	do	do	1943
361	21	do	do	1943
362	22	do	do	1944
363	5	do	do	1941
364	9	Solvay Process Div., Allied Chem. and Dye Corp.	do	1941
365	10	do	do	1942
366	11	do	do	1942
367	2	Gulf States Utilities Co.	do	1942
369	1	Kaiser Aluminum and Chem. Corp.	do	1943
370	2	do	do	1942
371	2	Copolymer Corp.	do	1941
372	1	do	do	1943
373		E. Allen	T. 6 S., R. 1 E.	1941
374		Mr. Babin	do	1910
376		J. E. Butler	do	1944
378		O. Day	do	1953
379		W S. Hubbs	T. 6 S., R. 2 E.	1944
380		H. Evans	T. 5 S., R. 1 W.	1937
381		P. Cowan	T. 6 S., R. 1 E.	1935
383		Mr. McVay	T. 5 S., R. 1 W.	
384		do	do	1944
385		W. J. Decker	do	1936
386		do	do	1944
388		N. H. DeBritton	T. 6 S., R. 1 E.	1926
389		do	do	1943
390		Baton Rouge Water Works Co.	T. 7 S., R. 1 W.	1944
392		Department of the Army	T. 6 S., R. 2 E.	1942
393		W. J. Decker	T. 5 S., R. 1 W.	1944

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level1	Date	Use	Remarks
Parish—Continued						
972	...	...	...	...	D	
1,101	...	...	...	...	D, S	L.
1,140	...	...	...	...	D	
1,205	1,182-1,202	...	...	...	D	L.
1,200	...	...	...	...	D	
1,080	...	...	...	...	D	L.
1,256	1,228-1,256	...	...	...	D	L.
1,206	1,186-1,206	...	+14	Apr. 1944	D	L.
1,380	1,367-1,380	...	+12	Apr. 1944	D, S	L.
1,670	1,630-1,670	...	...	...	D, S	
1,140	1,120-1,140	...	...	...	D	
1,120	1,100-1,120	...	...	...	D	
385	...	...	...	...	A	
1,949	...	[b]120	[a]+37 [a]+34	Oct. 1944 Feb. 1947	P	
1,608	...	...	...	...	D	
380	360-380	...	...	...	D	
1,430	1,390-1,430	...	+32	Jan. 1939	D	
1,130	...	...	+25	—— 1935	D	
450	340-438	1,000	172	July 1942	N	
2,434	2,358-2,434	1,010	40	Sept. 1942	I	L.
2,413	2,333-2,413	990	...	...	I	C.
2,395	2,315-2,395	920	25	May 1943	I	
416	316-413	900	...	...	I	C.
442	342-438	368	[a]193	Feb. 1953	I	
445	340-441	1,110	[a]198	Jan. 1953	I	
433	320-430	702	...	...	I	C.
1,302	1,220-1,300	[b]1	+17	Mar. 1941	I	
654	573-653	430	[a]151	Feb. 1953	I	C.
442	223-426	1,060	[a]185	Jan. 1953	I	C.
665	264-411 562-665	1,115	121	Mar. 1952	I	
425	272-404	790	[a]186	Jan. 1953	I	
1,226	811-897 1,137-1,226	1,070	50	Apr. 1952	I	
657	290-388 560-657	1,140	180	Dec. 1942	I	
668	305-407 515-624	1,620	167	Aug. 1942	I	
665	333-418 558-659	1,460	167	July 1942	I	
2,065	1,961-2,061	750	5	June 1942	I	
2,344	2,290-2,340	1,100	25	May 1944	I	L.
2,315	2,252-2,317	1,000	25	May 1944	I	L.
2,355	2,302-2,352	1,000	11	May 1952	I	L.
2,355	2,302-2,352	1,000	18	Feb. 1943	I	
1,400	...	...	6	Nov. 1947	D	
2,000	...	...	22	July 1949	D	
660	620-660	...	50	Oct. 1945	D	
2,777	...	...	...	...	D	
737	727-737	...	26	Nov. 1944	D, S	
1,122	1,102-1,122	500	25	Dec. 1952	D	
1,115	...	...	+37	Oct. 1935	D	
264	...	...	...	...	A	
1,919	1,879-1,919	200	[a]+30 [a]+31	Feb. 1945 Feb. 1947	D, S	L, C.
271	241-271	...	...	...	A	
276	262-276	...	62	Nov. 1944	A	
1,451	1,370-1,451	[b]110	...	...	D	
287	...	...	...	...	S	
2,200	1,350-1,390 2,120-2,200	...	...	...	A	
1,464	...	...	+21	Sept. 1942	P	C.
370	356-370	...	...	...	D, S	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
395	1	General Chem. Div., Allied Chem. and Dye Corp.	T. 6 S., R. 1 W.	1945
396		East Baton Rouge Parish	T. 6 S., R. 2 E.	1945
397	12	Solvay Process Div., Allied Chem. and Dye Corp.	T. 6 S., R. 1 W.	1946
398	48	Esso Standard Oil Co.	do.	1945
400		J. C. Summers	T. 7 S., R. 1 E.	1947
403	59	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1952
413	3	Baton Rouge Water Works Co.	T. 7 S., R. 1 W.	1946
415		V. E. Burns	T 7 S., R. 2 E.	1945
416		F. E. Bennett	T. 4 S., R. 1 E.	1945
417		C. D. Turner	do.	1945
420		R. T. Penny	T. 6 S., R. 1 E.	1945
421		Sugarfield Oil Co.	do.	1946
425		A J. Rabb	T. 5 S., R. 1 E.	1945
426		J. K. Adams	T. 6 S., R. 2 E.	1945
429		Wm. Schmidt	T. 4 S., R. 2 E.	
430		R. C. Smith	T. 5 S., R. 2 E.	1945
431		W. O. Cathey	T. 7 S., R. 2 E.	1946
432		Louisiana Dept. of Education	T. 5 S., R. 1 W.	1946
433		J. East	T. 4 S., R. 1 W.	
434		Peoples Ice and Fuel Co.	T. 7 S., R. 1 W.	1945
435		D. Walsh	T. 4 S., R. 1 W.	
440		H. W. Taylor	do.	1948
441		R. C. Staring	T. 7 S., R. 2 E.	
442	49	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1946
443		Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1946
444	14	do.	T. 7 S., R. 1 W.	1946
445		Baton Rouge Country Club.	T. 7 S., R. 1 E.	1947
447		Baton Rouge Water Works Co.	T. 6 S., R. 1 W.	1946
448		do.	do.	1945
450	2-A	Solvay Process Div. Allied Chem. and Dye Corp.	do.	1946
452		L. E. Smith	T. 8 S., R. 1 E.	1947
454	3	Consolidated Chem. Industries, Inc.	T. 6 S., R. 1 W.	1947
455		Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1947
456		do.	T 6 S., R. 1 W.	1947
458	50	Esso Standard Oil Co.	do.	1947
459		Hernandez Ice Co.	T. 6 S., R 1 E.	1948
460		W. Munson	T. 5 S., R. 1 W.	1947
461		J. Granberry	T. 6 S., R. 1 E.	1947
462		Jennings Auction Barn	do.	1947
463	51	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1947
464		Baton Rouge Brick and Tile Co.	T. 5 S., R. 1 W.	1947
466		Baton Rouge Water Works Co.	T. 6 S., R. 1 W.	1948
467	2	General Chem. Div., Allied Chem. and Dye Corp.	do.	1948
468		A. M. Holden	T. 5 S., R. 1 E.	1948
469		do.	do.	
473	52	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1948
490	53	do.	do.	1948
492		Smith Bryant	do.	1948
493	3	Rock Ice Co., Inc.	T. 7 S., R. 1 W.	1945
494		S. Weber	T. 6 S., R. 1 E.	1944
495		Louisiana State Univ.	T. 7 S., R. 1 E.	1948
496	3	Gulf States Utilities Co.	T. 6 S., R. 1 W.	1948
499	54	Esso Standard Oil Co.	do.	1948

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
1,002	921-1,001	690	60	Apr. 1945	I	
1,700	1,641-1,700	[b]185	+35	Apr. 1945	P	
662	330-360 380-420 602-662	990	133	Nov. 1945	I	
1,285	895-940 990-1,020 1,225-1,285	1,400	...	...	I	L.
2,500	2,420-2,500	...	...	...	P	
1,270	1,118-1,270	1,350	[a]28	Jan. 1953	I	C.
1,745	1,510-1,530 1,620-1,690 1,701-1,745	800	...	...	P	
105	...	...	...	...	D	
225	...	...	...	...	...	
210	...	...	...	...	D	
292	274-292	...	...	...	D	
392	360-392	...	33	Apr. 1946	D	
200	186-200	...	...	...	D	
138	124-138	...	...	...	D	
190	168-190	...	...	...	D	
168	146-168	...	...	...	D	
453	443-453	7	14	Feb. 1946	D	
1,940	...	...	+40	July 1947	P	
1,907	1,850-1,900	...	40	Apr. 1946	D	L.
611	560-610	500	...	...	I	
196	...	...	...	...	D	
200	194-200	...	...	...	D	
497	475-495	...	21	Aug. 1946	D	
428	310-425	990	...	...	I	
1,460	...	...	...	...	P	
2,253	1,973-2,249	...	...	...	P	L, C.
540	460-540	...	13	Jan. 1947	P	L.
1,626	1,473-1,626	...	+2	Sept. 1947	P	
1,610	1,529-1,610	...	15	May 1947	N	
1,242	1,159-1,232	250	10	May 1946	I	
279	269-279	...	27	Feb. 1947	D	
2,304	2,222-2,302	600	33	June 1947	I	
1,165	963-1,165	120	7	Aug. 1947	P	
1,895	1,765-1,895	...	...	...	P	C.
407	343-405	534	[a]191	Feb. 1953	I	
392	372-392	...	...	...	A	
300	...	60	...	...	D	
331	310-330	...	[a]73	Nov. 1947	D	
400	...	...	[a]98	Nov. 1947	I	
424	339-421	590	[a]191	Feb. 1953	I	
280	...	60	...	...	I	
1,960	1,880-1,960	...	...	...	N	
1,021	968-1,021	950	[a]102	Dec. 1952	I	L, C.
2,430	2,342-2,430	...	[a]+71 [a]+61	Feb. 1948 June 1951	D	L.
920	...	...	[a]6 [a]20	Mar. 1948 Apr. 1953	D	
692	492-692	1,420	[a]151	Feb. 1953	I	
690	545-690	1,180	[a]156	Feb. 1953	I	
378	315-378	...	187	Aug. 1948	D	L.
704	684-704	75	125	Sept. 1950	I	L.
1,442	1,270-1,442	...	...	...	D	
540	454-540	100	73	Aug. 1948	N	
2,091	1,950-2,091	870	45	Oct. 1948	I	
430	330-430	822	...	...	I	

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				East Baton Rouge
500		Cotton's Bakery	T. 7 S., R. 1 W.	1948
501	55	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1949
503		J. C. Ainsworth	T 6 S., R. 1 E.	1949
504	4	Baton Rouge Water Works Co.	T. 7 S., R. 1 E.	1949
505	56	Esso Standard Oil Co.	T. 6 S., R. 1 W.	1950
506	57	do	do	1950
507		P. M. Floyd, Jr.	T. 6 S., R. 1 E.	1950
508		D Mills	T. 4 S., R. 1 W.	1950
509		Export Transfer Co.	T. 6 S., R. 1 W.	1950
510	17	Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1951
511	4	Rock Ice Co.	T. 7 S., R. 1 W.	1947
512	5	do	do	1947
514		Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	1950
516		C. Hulings	T. 4 S., R. 1 W.	
517		Louisiana Dept. of Education	T. 6 S., R. 1 W.	1951
518	1	Ideal Cement Co.	do	1951
519		Louisiana Dept. of Education	do	1943
520		R. Coco	T. 5 S., R. 2 E.	1951
522	4	Gulf States Utilities Co.	T. 6 S., R. 1 W.	1948
523	1	Baton Rouge Water Works Co.	T. 6 S., R. 1 E.	
524		do	do	
525	3	do	T. 6 S., R. 1 W.	
526	1-Y	Esso Standard Oil Co.	do	1951
527	2-Y	do	do	1951
528	3-Y	do	do	1951
529	4-Y	do	do	1951
530	58	do	do	1951
531	5-Y	do	do	1951
532	6-Y	do	do	1951
533	7-Y	do	do	1951
534	31	Gulf States Utilities Co.	do	1952
535	3	Copolymer Corp.	do	1952
536		Mr. Jarreau	T. 7 S., R. 1 W.	1952
537	2	Ideal Cement Co.	T. 6 S., R. 1 W.	1951
538	4	Consolidated Chem. Industries, Inc.	T. 6 S., R. 1 W.	1952
539		W. J. Decker	T. 5 S., R. 1 W.	1952
540	13	Solvay Process Div., Allied Chem. and Dye Corp.	T. 6 S., R. 1 W.	1947
541	14	do	do	1947
543	26	do	do	1952
544	3	Kaiser Aluminum and Chem. Corp.	do	1953
545	5	Consolidated Chem. Industries, Inc.	do	1952
546	6	do	do	1952
547	7	do	do	1952
548	32	Gulf States Utilities Co.	do	1953
549	24	do	do	1953
550	33	do	do	1953
				West Baton
2	1	Esso Standard Oil Co.	T. 6 S., R. 12 E.	1923
3		Cinclare Central Factory	T. 8 S., R. 12 E.	1923
4		Town of Port Allen	T. 7 S., R. 12 E.	1936

See footnote at end of table.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
741	695-741	....	147	Oct. 1948	I	
197	110-190	3,750	(1)	....	N	C.
400	....	....	40	July 1949	D	
1,777	1,510-1,530 1,620-1,690 1;702-1,775	....	....	....	P	C.
434	333-431	864	[a]287	Jan. 1953	I	
442	355-439	931	[a]197	Feb. 1953	I	
400	....	....	124	May 1950	D	
1,140	1,105-1,140	40	25	May 1950	D, S	L.
600	560-600	50	90	Apr. 1950	I	
1,605	1,520-1,602	....	....	....	P	C.
336	245-333	400	....	....	I	
336	250-330	400	....	....	I	
2,590	2,510-2,590	....	20	Nov. 1952	N	
1,065	....	....	....	....	D	L.
2,590	2,510-2,590	[b]934	+76	Apr. 1951	P	L, C.
550	460-550	1,220	176	July 1951	I	D.
1,356	1,318-1,356	750	....	....	P	
2,100	2,060-2,100	[b]60	+65	July 1951	D, S	C.
1,193	863-884 999-1,030 1,149-1,190	820	20	Dec. 1948	I	
1,610	....	....	....	....	N	
1,900	....	....	....	....	N	
1,400	....	....	....	....	P	
220	205-220	....	....	....	O	
220	205-220	....	....	....	O	
220	179-194	....	....	....	O	
200	172-187	....	....	....	O	
193	103-193	2,000	....	....	N	
200	103-193	....	....	....	O	
200	103-193	....	....	....	O	
200	103-193	....	....	....	O	
2,808	2,724-2,808	1,550	+74	Oct. 1952	I	
1,221	1,120-1,221	1,000	[a]26	Feb. 1953	I	
116	106-116	....	....	....	D	
605	520-604	1,000	....	....	I	
540	272-298 308-331 488-544	....	166	Oct. 1952	I	
2,590	2,560-2,590	[b]450	+41	Aug. 1952	D	
656	334-419 595-653	1,460	....	....	I	
645	330-411 582-642	1,650	....	....	I	
2,085	1,905-2,085	1,360	60	Dec. 1952	I	
1,956	1,826-1,952	1,209	35	Jan. 1953	I	
600	....	....	....	....	N	
586	515-585	....	....	....	I	
612	488-544 562-612	....	....	....	I	
2,800	....	....	....	....	I	L.
2,080	1,859-2,079	1,525	[a]23	May 1953	I	
2,921	2,093-2,188	....	....	June 1953	I	
Rouge Parish						
1,253	1,192-1,253	[b]420	+60	June 1923	I	
2,156	2,076-2,156	[b]350	[a]+52	Mar. 1942	P	
1,863	1,810-1,863	[b]675	[a]+63 [a]+22	Nov. 1936 Aug. 1947	P	L, C.

Table 5.—*Description of wells in*

U. S. Geol. Survey well no.	Company no.	Owner	Location	Date completed
				West Baton Rouge
5		Town of Port Allen	T. 7 S., R. 12 E.	1925
6		Cinclare Central Factory	T. 8 S., R. 12 E.	1916
7		do	do	
10		Poplar Grove Plantation	T. 7 S., R. 12 E.	1920
20		Phillips Bros	do	1944
21		Poplar Grove Plantation	do	1916
23		Cinclare Central Factory	T. 8 S., R. 12 E.	1946
24		do	do	1946
30		Poplar Grove Plantation	T. 7 S., R. 12 E.	1950
32		H. Wilkerson III	T. 6 S., R. 12 E.	1953

[1]Water level fluctuates with river stage.

the Baton Rouge area—Continued

Depth (feet)	Screen setting below land surface (feet)	Yield (gpm)	Water level[1]	Date	Use	Remarks
Parish—Continued						
1,338	1,230-1,335	[b]480	[a]+35 [a]+13	Feb. 1943 Feb. 1947	P	C.
2,134	2,094-2,134	....	[a]+71	—— 1916	I	
200	175-200	250	....	....	I	
2,082	2,017-2,082	[b]410	[a]+30 [a]+9	Feb. 1943 Feb. 1945	I, D	L.
2,083	....	....	....	....	I	L.
165	130-165	150	....	....	I	
2,098	2,065-2,098	[b]235	+51	July 1946	I	L.
380	360-380	100	....	....	I	
190	150-190	800	16	Sept. 1950	I	
2,096	....	....	6	May 1953	D	

LOGS OF WELLS

Table 6 presents drillers' logs of representative water wells scattered throughout the area. Most of these logs were reported by drillers and were obtained from either the water-well contractor or the well owner.

For some wells, only the sands penetrated were reported by the driller and it was assumed for this report that the spaces between them were occupied by shale or clay.

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*

EAST BATON ROUGE PARISH

EB-16. Esso Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	320	320	Clay	170	1,060
Sand	132	452	Sand	31	1,090
Clay	19	471	Clay	70	1,161
Sand	129	600	Sand, fine	38	1,199
Clay	6	606	Sand	63	1,262
Sand	21	627	Clay	2	1,264
Clay	90	717	Ssnd	11	1,275
Sand	65	782	Clay	215	1,490
Clay	78	860	Ssnd	84	1,574
Sand	30	890			

EB-28. Esso Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	315	315	Sand	40	1,210
Sand	135	450	Clay	10	1,220
Clay	20	470	Sand	15	1,235
Sand	158	628	Clay	5	1,240
Clay	85	713	Sand	40	1,280
Sand	72	785	Clay	210	1,490
Clay	48	833	Sand	40	1,530
Sand	20	853	Clay	9	1,539
Clay	12	865	Sand	61	1,600
Sand	53	918	Clay	8	1,608
Clay	252	1,170			

EB-39. Esso Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, yellow	198	198	Sand	34	741
Sand	63	261	Clay, very rough	73	814
Clay, blue	86	347	Sand	20	834
Sand	71	418	Clay and shale	78	912
Gravel	20	438	Sand	18	930
Clsy, very rough	72	510	Clay and shale	182	1,112
Shale	32	542	Sand	46	1,158
Sand	71	613	Clay with shale	323	1,481
Clay	94	707	Sand with gravel	94	1,575

EB-71. Ethyl Corp., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, surface	229	229	Ssnd and gravel	134	974
Sand and gravel	23	252	Clay	65	1,039
Clsy	16	268	Sand and gravel	15	1,054
Sand and gravel	164	432	Clay	41	1,095
Clsy	35	467	Sand and grsvel	22	1,117
Sand, hard packed	54	521	Clay	10	1,127
Clay	67	588	Sand and grsvel	129	1,256
Sand and gravel	98	686	Clay	677	1,933
Clay	76	762	Sand and gravel	128	2,061
Sand	14	776	Clay	33	2,094
Clay	64	840	Sand snd gravel	36	2,130

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-73. Solvay Process Div., Allied Chem. and Dye Corp., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, surface	295	295	Clay, blue	80	970
Sand, fine	20	315	Sand and gravel	80	1,050
Sand, coarse	28	343	Shale	75	1,125
Sand and gravel	37	380	Sand and gravel	120	1,245
Sand and shale	60	440	Clay	313	1,558
Shale	80	520	Rock, hard	2	1,560
Shale, blue	115	635	Clay	50	1,610
Sand and gravel	80	715	Shale	20	1,630
Clay	75	790	Clay, blue	20	1,650
Rock	1	791	Rock, hard	1	1,651
Sand, coarse	13	804	Clay, blue	19	1,670
Rock	1	805	Shale	10	1,680
Sand, coarse	13	818	Sand, coarse	120	1,800
Clay	26	844	Sand and gravel	20	1,820
Rock, hard	6	850	Clay, blue	5	1,825
Sand and gravel	40	890			

EB-92. Baton Rouge Water Works Co., Baton Rouge, La., T. 6 S., R. 1 E.

Clay	315	315	Clay	50	885
Sand	130	445	Sand	25	910
Clay	10	455	Clay	80	990
Sand	10	465	Sand	90	1,080
Clay	25	490	Clay	8	1,088
Sand	5	495	Rock	1	1,089
Clay	35	530	Clay	176	1,265
Sand	15	545	Sand	5	1,270
Gravel	45	590	Clay	130	1,400
Sand	15	605	Sand	30	1,430
Clay	73	678	Clay	30	1,460
Sand	37	715	Sand	30	1,490
Clay	8	723	Clay	25	1,515
Sand	37	760	Sand	100	1,615
Clay	10	770	Clay	15	1,630
Sand	10	780	Sand	20	1,650
Clay	15	795	Clay	379	2,029
Sand and gravel	40	835	Sand	197	2,226

EB-112. Keans Laundry, Baton Rouge, La., T. 6 S., R. 1 W.

Not reported	1,510	1,510	Clay	52	2,132
Sand	13	1,523	Sand	8	2,140
Clay	5	1,528	Clay	2	2,142
Sand	6	1,534	Sand	6	2,148
Clay	511	2,045	Clay	12	2,160
Sand	9	2,054	Sand	20	2,180
Clay	6	2,060	Clay	40	2,220
Sand	20	2,080	Gravel	34	2,254

EB-116. Istrouma Laundry, Baton Rouge, La., T. 6 S., R. 1 W.

Surface	192	192	Sand with small streaks of shale	63	856
Sand	66	258	Shale	439	1,295
Shale	92	350	Sand	15	1,310
Sand	95	445	Shale	188	1,498
Shale	75	520	Sand and gravel	154	1,652
Sand	105	625	Shale	341	1,993
Shale	70	695	Sand	37	2,030
Sand	41	736	Sand, coarse	121	2,151
Shale	57	793			

EB-117. Louisiana State Univ., Baton Rouge, La., T. 7 S., R. 1 E.

Not reported	158	158	Clay	30	450
Sand	42	200	Sand	42	492
Clay	90	290	Clay	39	531
Sand	31	321	Sand	24	555
Clay	44	365	Clay	85	640
Sand	55	420	Sand	20	660

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-117. Louisiana State Univ., Baton Rouge, La., T. 7 S., R. 1 E.—Continued

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	83	743	Clay	39	928
Sand	15	758	Sand	21	949
Clay	26	784	Clay	265	1,214
Gravel	37	821	Sand	46	1,260
Clay	7	828	Clay	22	1,282
Sand and gravel	61	889	Sand and shale	120	1,402

EB-118. Lady of the Lake Sanitarium, Baton Rouge, La., T. 7 S., R. 1 W.

Not reported	285	285	Clay	10	1,182
Sand	52	337	Sand	19	1,201
Clay	173	510	Clay	24	1,225
Sand	50	560	Sand	91	1,316
Clay	15	575	Clay	20	1,336
Sand	25	600	Sand	15	1,351
Clay	128	728	Clay	6	1,357
Sand	131	859	Sand	27	1,384
Clay	39	898	Clay	228	1,612
Sand	25	923	Sand	25	1,637
Clay	19	942	Clay	24	1,661
Sand	8	950	Sand	22	1,683
Clay	80	1,030	Clay	264	1,947
Sand	22	1,052	Sand	12	1,959
Clay	83	1,135	Clay	71	2,030
Sand	37	1,172	Sand	78	2,108

EB-119. Illinois Central R.R., Baton Rouge, La., T. 7 S., R. 1 W.

Clay	227	227	Gumbo	41	415
Sand	23	250	Sand	12	427
Gumbo	30	280	Gumbo	38	465
Sand	40	320	Shale	194	659
Gumbo	20	340	Gumbo	60	719
Sand	14	354	Shale	168	887
Clay	6	360	Sand and shale	16	903
Shale	7	367	Sand	45	948
Sand	7	374			

EB-121. Oak Grove Dairy, Baton Rouge, La., T. 7 S., R. 1 W.

Not reported	195	195	Clay	175	1,015
Sand	10	205	Sand	72	1,087
Clay	105	310	Clay	54	1,141
Sand	30	340	Sand	37	1,178
Clay	10	350	Clay	17	1,195
Sand	88	438	Sand	8	1,203
Clay	72	510	Clay	257	1,460
Sand	128	638	Sand	16	1,476
Clay	90	728	Clay	19	1,495
Sand	112	840	Sand	75	1,570

EB-122. City of Baton Rouge, Baton Rouge, La., T. 7 S., R. 1 W.

Not reported	220	220	Sand	45	892
Sand	80	300	Clay	44	936
Clay	140	440	Sand	69	1,005
Sand	65	505	Clay	83	1,088
Clay	85	590	Sand	35	1,123
Sand	160	750	Clay	52	1,175
Clay	50	800	Sand	38	1,213
Sand	20	820	Clay	13	1,226
Clay	27	847			

EB-130. Henry Jolly, Baton Rouge, La., T. 7 S., R. 1 E.

Clay	80	80	Sand	86	409
Sand	10	90	Clay	147	556
Clay	175	265	Sand	35	591
Sand	35	300	Clay	64	655
Clay	23	323	Sand	106	761

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-130. Henry Jolly, Baton Rouge, La., T. 7 S., R. 1 E. —Continued

Material	Thickness (feet)	Depth (feet)	Materisl	Thickness (feet)	Depth (feet)
Clay	48	809	Sand	35	1,147
Sand	79	888	Clsy	103	1,250
Clay	166	1,054	Rock, broken	13	1,263
Sand	21	1,075	Clay	73	1,336
Shale, hard	15	1,090	Sand	37	1,373
Clay	22	1,112			

EB-131. Stsndard Ice Co., Baton Rouge, Ls., T. 7 S., R. 1 W.

Not reported	288	288	Clay	128	893
Sand	57	345	Sand	37	930
Clay	17	362	Clay	27	957
Sand	28	390	Sand	26	983
Clay	182	572	Clsy	121	1,104
Sand	24	596	Sand	16	1,120
Clay	116	712	Clay	141	1,261
Sand	53	765	Sand	53	1,314

EB-132. Schuylkill Products Co., Inc., Baton Rouge, La., T. 6 S., R. 1 W.

Surface	320	320	Shale and sand	90	1,000
Sand	120	440	Shale	550	1,550
Shale	70	510	Sand	150	1,700
Sand, hard	90	600	Shale	206	1,906
Shale	100	700	Sand	66	1,972
Sand	95	795	Shale	8	1,980
Shale	115	910			

EB-133. Baton Rouge Water Works Co., Baton Rouge, La., T. 6 S., R. 1 E.

Clay	181	181	Clay	11	1,615
Sand	52	233	Sand, fine	55	1,670
Clay	92	325	Clay, soft, and shale	35	1,705
Sand	140	465	Clay	61	1,766
Clay	70	535	Sand	174	1,940
Sand	25	560	Shale	20	1,960
Clay	15	575	Clay	213	2,173
Sand	50	625	Sand, coarse, and gravel	13	2,186
Clay	95	720	Clay, tough, brown, reddish	40	2,226
Sand, medium	25	745	Shale	28	2,254
Clay	37	782	Sand	8	2,262
Ssnd and gravel	50	832	Clay	31	2,293
Clay	28	860	Sand	38	2,331
Sand and gravel	65	925	Clay	114	2,445
Clay	50	975	Shale	37	2,482
Sand and gravel, coarse	110	1,085	Sand	71	2,553
Clay	35	1,120	Clay	2	2,555
Sand	50	1,170	Sand	8	2,563
Clay	235	1,405	Clay, tough	52	2,615
Sand	65	1,470	Shale, red-brown	20	2,635
Clay	25	1,495	Clay, tough	77	2,712
Sand	109	1,604			

EB-134. Community Club, Baton Rouge, Baton Rouge, La., T. 6 S., R. 1 W.

Soil	5	5	Sand	58	1,346
Clay, white	72	77	Clay	196	1,542
Clay	5	82	Sand	18	1,560
Clay, brown	78	160	Clay	117	1,677
Sand	8	168	Sand	10	1,687
Clay	122	290	Clay	113	1,800
Sand	10	300	Sand	10	1,810
Clay	134	434	Clay	95	1,905
Sand	12	446	Sand	12	1,917
Clay	96	542	Clay	109	2,026
Sand	47	589	Sand and gravel	28	2,054
Clay	56	645	Clay	41	2,095
Sand	10	655	Sand	6	2,101
Clay	69	724	Clay	5	2,106
Sand	41	765	Sand	22	2,128
Clay	5	770	Clay	3	2,131
Sand and gravel	114	884	Sand	10	2,141
Clay	279	1,163	Clay	2	2,143
Sand	42	1,205	Sand	41	2,184
Clay	83	1,288			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-135. Mr. Dunn, Baton Rouge, La., T. 6 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Shale	350	350	Sand	48	782
Sand and gravel	115	465	Shale	547	1,329
Shale	167	632	Sand	18	1,347
Sand	26	658	Shale	33	1,380
Shale, streaks of sand	76	734	Sand and gravel	49	1,429

EB-136. A. A. Edgens, Baton Rouge, La., T. 4 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	70	70	Sand, medium	18	1,053
Sand	240	310	Shale	9	1,062
Shale	70	380	Sand, fair	28	1,090
Sand	60	440	Shale	90	1,180
Shale	115	555	Sand, hard	8	1,188
Sand and gravel	105	660	Shale	18	1,206
Shale	20	680	Sand	45	1,251
Sand, hard	30	710	Shale	9	1,260
Shale	160	870	Sand	20	1,280
Sand, hard, fine	90	960	Sand, hard	30	1,310
Shale	75	1,035	Shale	50	1,360

EB-138. Istrouma Boy Scout Camp, Indiana Mound, La., T. 5 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	25	25	Gravel	90	605
Sand	25	50	Shale	145	750
Shale	60	110	Sand	90	840
Sand and gravel, coarse	38	148	Sand, coarse, and grsvel	75	915
Shale	12	160	Shale	7	922
Sand	55	215	Sand	86	1,008
Shale	70	285	Shale	72	1,080
Sand	160	445	Shale with streaks of sand	70	1,150
Shale	70	515	Sand and gravel	50	1,200

EB-142. Pat Guerney, Zachary, La., T. 4 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	30	30	Shale	15	718
Shale and streaks of sand	117	147	Sand and gravel	42	760
Sand	118	265	Shale	150	910
Sand and gravel	65	330	Sand	99	1,009
Shale	190	520	Shale and sand	58	1,067
Sand	65	585	Shale	68	1,135
Shale	90	675	Sand and gravel	35	1,170
Sand	28	703			

EB-146. City of Baton Rouge, Baton Rouge, La., T. 7 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	80	80	Clay	70	780
Sand	15	95	Sand	35	815
Clay	155	250	Clay	10	825
Sand	30	280	Sand	45	870
Clay	60	340	Clay	45	915
Sand	30	370	Sand	65	980
Clay	55	425	Clay	155	1,135
Sand	60	485	Sand	35	1,170
Clay	85	570	Clay	32	1,202
Sand	125	695	Sand	57	1,259
Clay	5	700	Clay	3	1,262
Sand	10	710			

EB-148. M. M. Hughes, Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Sand	170	170	Sand and grsvel	175	1,000
Shale	170	340	Shale	267	1,267
Sand	25	365	Sand and gravel	115	1,382
Shale	460	825			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-149. Mr. McClure, Baton Rouge, La., T. 5 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	40	40	Sand	5	585
Shale	60	100	Shale	155	740
Sand, fine	20	120	Sand	33	773
Shale	50	170	Shale	47	820
Sand	20	190	Sand	140	960
Shale	65	255	Gravel, coarse	60	1,020
Sand	55	310	Gravel	8	1,028
Shale and sand	60	370	Shale	162	1,190
Sand	26	396	Shale, sandy	68	1,258
Shale	54	450	Sand	2	1,260
Sand	15	465	Gravel	20	1,280
Shale	115	580			

EB-150. Baton Rouge Water Works Co., Baton Rouge, La., T. 7 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, blue	65	65	Clay	138	1,382
Sand	40	105	Sand and shale	4	1,386
Sand, black	45	150	Clay	110	1,496
Clay	200	350	Sand	32	1,528
Shale	15	365	Clay	69	1,597
Clay, tough	95	460	Sand	149	1,746
Sand, medium	25	485	Clay, tough	309	2,055
Clay, hard	90	575	Sand and shale	13	2,068
Sand, medium	30	605	Sand	211	2,279
Shale, hard	175	780	Rock	23	2,302
Sand	5	785	Clay	38	2,340
Clay	35	820	Shale	65	2,405
Sand	60	880	Clay	15	2,420
Clay	265	1,145	Shale	40	2,460
Sand	49	1,194	Clay	80	2,540
Clay, soft	18	1,212	Sand	103	2,643
Sand	32	1,244			

EB-154. Baton Rouge Water Worka Co., Baton Rouge, La., T. 6 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, surface	19	19	Shale	53	1,217
Sand	13	32	Sand	30	1,247
Shale	94	126	Shale	47	1,294
Sand	25	151	Sand	21	1,315
Shale	89	240	Shale	102	1,417
Sand	210	450	Sand	192	1,609
Shale	10	460	Shale	250	1,859
Sand and streaks of shale	110	570	Sand	113	1,972
Sand	55	625	Sand, poor; streaks of shale	11	1,983
Shale	88	713	Sand and shale streaks	23	2,006
Sand, hard, and rock	65	778	Sand	12	2,018
Sand	16	794	Sand, hard, coarse	66	2,084
Shale	35	829	Sand and shale streaks	63	2,147
Shale with streaks of sand	88	917	Shale	13	2,160
Shale	161	1,078	Sand	5	2,165
Sand	54	1,132	Shale	158	2,323
Shale	20	1,152	Sand	151	2,474
Sand	12	1,164			

EB-156. Marion Kahn, Baton Rouge, La., T. 7 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	180	180	Sand	22	816
Sand	10	190	Clay	26	842
Clay	75	265	Sand	48	890
Sand	30	295	Clay	83	973
Clay	114	409	Sand	20	993
Sand	99	508	Clay	161	1,154
Clay	66	574	Sand	48	1,202
Sand	91	665	Clay	4	1,206
Clay	129	794			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-157. Marion Kahn, Baton Rouge, La., T. 7 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	249	249	Clay	14	801
Sand	27	276	Sand	3	804
Clay	51	327	Clay	38	842
Sand	27	354	Sand	42	884
Clay	12	366	Clay	75	959
Sand	14	380	Shale	4	963
Clay	5	385	Sand	21	984
Sand	18	403	Clay	161	1,145
Clay	2	405	Sand	42	1,187
Shale	6	411	Clay	27	1,214
Sand	91	502	Shale	12	1,226
Clay	51	553	Sand	36	1,262
Shale	8	561	Clay	29	1,291
Clay	4	565	Shale	18	1,309
Sand	89	654	Sand	30	1,339
Clay	63	717	Clay	158	1,497
Shale	9	726	Shale	17	1,514
Sand	6	732	Sand	39	1,553
Clay	48	780	Clay	2	1,555
Sand	7	787			

EB-166. Baton Rouge Water Works Co., Baton Rouge, La., T. 7 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	150	150	Sand and shale	15	730
Sand	14	164	Sand	6	736
Clay	176	340	Clay	12	748
Sand	131	471	Sand	84	832
Clay	39	510	Clay	98	930
Shale	13	523	Sand	18	948
Sand	43	566	Clay	28	976
Clay	5	571	Sand	41	1,017
Sand	58	629	Clay	3	1,020
Clay	32	661	Sand	38	1,058
Sand	13	674	Clay	2	1,060
Clay	41	715			

EB-170. City of Baton Rouge, Baton Rouge, La., T. 6 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	65	65	Clay	124	902
Sand	65	130	Sand	206	1,108
Clay	46	176	Clay	172	1,280
Sand	169	345	Sand	50	1,330
Clay	138	483	Shale	4	1,334
Sand	8	491	Clay	1	1,335
Clay	131	622	Sand	10	1,345
Sand	17	639	Shale	5	1,350
Clay	46	685	Sand	3	1,353
Sand	39	724	Shale	4	1,357
Clay	10	734	Sand	23	1,380
Sand	44	778	Clay	2	1,382

EB-173. Russel Taylor, Zachary, La., T. 4 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	405	405	Clay	25	945
Sand	130	535	Sand	50	995
Clay	65	600	Clay	5	1,000
Sand	100	700	Sand	35	1,035
Clay	190	890	Clay	17	1,052
Sand	30	920			

EB-187. A. P. Walsh, Baton Rouge, La., T. 6 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	60	60	Shale	40	940
Sand and gravel	60	120	Sand	50	990
Shale	540	660	Shale	200	1,190
Sand	80	740	Sand and gravel	130	1,320
Shale	160	900			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-190. W. F. Owens, Zachary, La., T. 5 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	25	25	Shale	40	750
Sand	15	40	Sand	25	775
Sand and shale streaks	45	85	Shale	175	950
Sand	130	215	Sand	140	1,090
Shale	45	260	Shale	345	1,435
Sand	85	345	Sand	65	1,500
Shale	190	535	Shale	40	1,540
Sand	25	560	Sand	15	1,555
Shale	40	600	Shale	235	1,790
Sand	25	625	Sand and gravel	86	1,876
Shale	50	675	Shale	2	1,878
Sand	35	710			

EB-194. R. P. Easterly, Plains, La., T. 4 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, surface	14	14	Sand	65	900
Sand	16	30	Shale	140	1,040
Shale	50	80	Sand	80	1,120
Sand	130	210	Shale	43	1,163
Shale	30	240	Sand	152	1,315
Sand	60	300	Shale	47	1,362
Shale	30	330	Sand	123	1,485
Sand	55	385	Shale	8	1,493
Shale	205	590	Sand	18	1,511
Sand	90	680	Shale	303	1,814
Shale	155	835	Sand and gravel	98	1,912

EB-205. A. B. Hagen, Baton Rouge, La., T. 8 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	360	360	Sand	22	1,310
Sand	14	374	Clay	50	1,360
Clay	231	605	Sand, gravel, and shells	40	1,400
Sand	167	772	Clay	5	1,405
Clay	78	850	Rock	3	1,408
Sand	77	927	Shells and gas	32	1,440
Clay	111	1,038	Clay, hard	285	1,725
Sand	109	1,147	Sand, hard, and gravel	40	1,765
Clay	141	1,288	Sand	36	1,801

EB-226. C. A. McHardy, Baton Rouge, La., T. 7 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	80	80	Clay	45	920
Sand	40	120	Sand, fine	30	950
Clay	280	400	Clay	20	970
Sand and gravel	245	645	Sand	140	1,110
Clay	60	705	Clay	105	1,215
Sand, medium	35	740	Sand	57	1,272
Clay	75	815	Clay	3	1,275
Sand, medium	60	875			

EB-281-A. Louisiana State Univ., Baton Rouge, La., T. 7 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	218	218	Sand	12	1,400
Sand	10	228	Clay	133	1,533
Clay	13	241	Sand	15	1,548
Sand	138	379	Clay	203	1,751
Clay	51	430	Sand	12	1,763
Sand	118	548	Clay	8	1,771
Clay	47	595	Sand	19	1,790
Sand	77	672	Clay	71	1,861
Clay	76	748	Sand	52	1,913
Sand	35	783	Clay	262	2,175
Clay	72	855	Sand	13	2,188
Sand	81	936	Clay	39	2,227
Clay	147	1,083	Sand	11	2,238
Sand	58	1,141	Clay	214	2,452
Clay	44	1,185	Sand	8	2,460
Sand	50	1,235	Clay	25	2,485
Clay	90	1,325	Sand	16	2,501
Sand	13	1,338	Clay, blue	27	2,528
Clay	50	1,388			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-282. Town of Zachary, Zachary, La., T. 5 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	53	53	Sand	84	1,019
Sand	10	63	Clay, black	33	1,052
Clay	157	220	Sand	4	1,056
Gravel and sand	10	230	Clay, yellow	13	1,069
Clay, blue	137	367	Clay, black	23	1,092
Clay, yellow	91	458	Gumbo	39	1,131
Gumbo	42	500	Sand and gravel	11	1,142
Clay, yellow	42	542	Clay	6	1,148
Clay, blue	63	605	Gumbo	47	1,195
Gravel and sand	43	648	Sand, fine, black	19	1,214
Gumbo	21	669	Marl, blue	5	1,219
Gravel	21	690	Clay	21	1,240
Clay	65	755	Gumbo	24	1,264
Gravel	22	777	Sand, water	36	1,300
Clay, yellow	115	892	Clay, blue and yellow	24	1,324
Clay, black	43	935			

EB-292. United Gas Pipeline Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, yellow	210	210	Clay, blue	93	998
Sand	150	360	Sand	20	1,018
Clay, gray	95	455	Gumbo	87	1,105
Shale, green	40	495	Sand and shale	20	1,125
Sand	138	633	Sand, fine	25	1,150
Clay, blue	72	705	Sand, medium	20	1,170
Sand	15	720	Sand, coarse	20	1,190
Clay, blue	100	820	Clay, tough, blue	7	1,197
Sand	85	905			

EB-294. Consolidated Chemical Industries, Inc., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay and shale	305	305	Gumbo and shale	313	1,650
Sand	29	334	Sand	23	1,673
Shale	116	450	Sand and shale	322	1,995
Sand	164	614	Sand	31	2,026
Shale, streaky	312	926	Gumbo	28	2,054
Sand	43	969	Sand	26	2,080
Shale and gumbo	258	1,227	Gumbo and shale	127	2,207
Sand	45	1,272	Sand	71	2,278
Gumbo	29	1,301	Gumbo	15	2,293
Sand	36	1,337			

EB-296. Wood River Oil and Refining Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	301	301	Clay	5	1,091
Sand	18	319	Sand	15	1,106
Clay	111	430	Clay	25	1,131
Sand	110	540	Sand	32	1,163
Clay	6	546	Clay	72	1,235
Gravel	48	594	Sand	30	1,265
Clay	20	614	Clay	47	1,312
Sand	70	684	Rock	1	1,313
Clay	336	1,020	Clay	7	1,320
Sand	24	1,044	Sand	18	1,338
Clay	4	1,048	Clay	65	1,403
Sand	38	1,086			

EB-302. H. A. Bozeman, Baton Rouge, La., T. 7 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	60	60	Sand	61	716
Sand and gravel	68	128	Shale	209	925
Shale	212	340	Sand	60	985
Sand	60	400	Shale	203	1,188
Shale	255	655	Sand and gravel	112	1,300

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-304. Greenwell Springs Tuberculosis Hospital, Greenwell Springs, La., T. 5 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay, surface	7	7	Shale	63	733
Sand	20	27	Sand	50	783
Sand and shale	125	152	Shale	24	807
Sand	78	230	Sand	223	1,030
Sand, hard, coarse	64	294	Sand, hard	40	1,070
Shale	43	337	Sand	34	1,104
Sand	96	433	Shale	33	1,137
Shale	12	445	Ssnd	34	1,171
Sand	11	456	Shale	9	1,180
Shale	63	519	Sand	70	1,250
Sand	71	590	Shale	391	1,641
Shale	68	658	Sand	84	1,725
Sand	12	670			

EB-309. Town of Baker, Baker, La., T. 5 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	97	97	Sand	12	689
Sand	95	192	Clay	79	768
Clay	192	384	Sand	42	810
Sand	37	421	Clay	44	854
Clay	25	446	Ssnd	111	965
Sand	38	484	Clsy	151	1,116
Clay	31	515	Sand	13	1,129
Sand	20	535	Clay	239	1,368
Clay	142	677	Sand	70	1,438

EB-315. E. J. Morgan, Zion City, La., T. 6 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	202	202	Sand	119	749
Sand	52	254	Shale	226	975
Shale	31	285	Sand	202	1,177
Sand and gravel	86	371	Shale	234	1,411
Shale	58	429	Sand	26	1,437
Sand	39	468	Shale	31	1,468
Shale and sand streaks	27	495	Sand	122	1,590
Sand	80	575	Shale	214	1,804
Shale with streaks of sand	55	630	Sand	193	1,997
			Shale	3	2,000

EB-317. H. H. Edwards, Zachary, La., T. 6 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	50	50	Shale snd small beds of ssnd	406	1,131
Sand	300	350	Sand	43	1,174
Shale	250	600			
Sand	125	725			

EB-321. J. B. Carney, Baton Rouge, La., T. 5 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	225	225	Shale	266	862
Sand	30	255	Sand	48	910
Shale	30	285	Shale	90	1,000
Sand and gravel	112	397	Sand, hard, and gravel	125	1,125
Shale	43	440	Shale	275	1,400
Shale	140	580	Sand and gravel	60	1,460
Sand	16	596			

EB-326. Pike Burden, Baton Rouge, La., T. 7 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	160	160	Sand and gravel	88	785
Sand, coarse	6	166	Shale	165	950
Shale	41	207	Sand	15	965
Sand, fine	10	217	Shale	105	1,070
Shale	23	240	Sand	10	1,080
Shale and sand	315	555	Shale	40	1,120
Sand, fine	27	582	Sand and gravel	146	1,266
Shale	6	588	Shsle	174	1,440
Sand and gravel	104	692	Sand and gravel	67	1,507
Shale	5	697	Shale	18	1,525

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-329. Father Colbert, Comite, La., T. 6 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	102	102	Shale	140	620
Sand, fine	14	116	Sand, fine	68	688
Shale	96	212	Shale	37	725
Sand, fine	24	236	Sand and gravel	111	836
Shale	64	300	Shale	260	1,096
Sand and gravel	40	340	Sand	43	1,139
Gravel and hard sand	140	480			

EB-333. Joe Friedman, Comite, La., T. 6 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	15	15	Shale	60	680
Sand, fine	25	40	Sand, hard	95	775
Shale	120	160	Shale	55	830
Sand	245	405	Sand, fine	25	855
Shale	15	420	Shale	117	972
Sand	75	495	Sand, fine	18	990
Shale	95	590	Sand, hard	14	1,004
Gravel	15	605	Shale	36	1,040
Sand	15	620	Sand	61	1,101

EB-335. Babin, Bogan, and Gibbs, Baton Rouge, La., T. 6 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	210	210	Sand	62	792
Sand	105	315	Shale	30	822
Shale	112	427	Sand	20	842
Sand	110	537	Shale	268	1,110
Shale	23	560	Sand, fine	20	1,130
Sand	20	580	Shale	5	1,135
Shale	90	670	Sand, coarse; gravel	70	1,205
Sand and gravel	60	730			

EB-337. J. L. Shaffett, Baker, La., T. 5 S., R. 2 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Shale	8	8	Sand, hard	108	695
Sand	10	18	Shale	100	795
Shale	102	120	Sand	121	916
Sand	162	282	Shale	20	936
Shale	198	480	Shale, sandy	114	1,050
Sand	72	552	Sand and gravel	30	1,080
Shale	35	587			

EB-338. Julius Gurney, Baker, La., T. 5 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	60	60	Sand and gravel	110	625
Sand	12	72	Sand, hard	30	655
Shale	61	133	Shale	135	790
Sand and gravel	29	162	Sand	110	900
Sand	143	305	Sand and gravel	20	920
Shale	45	350	Shale	160	1,080
Sand and gravel	70	420	Sand	10	1,090
Shale	40	460	Shale	78	1,168
Sand	25	485	Sand	72	1,240
Shale	12	497	Sand and gravel	11	1,251
Sand	18	515	Shale	5	1,256

EB-340. L. C. Reames, Zachary, La., T. 5 S., R. 1 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	15	15	Shale	45	640
Sand and gravel	20	35	Sand	23	663
Sand and shale	60	95	Shale	27	690
Shale	50	145	Sand	70	760
Sand	30	175	Shale	175	935
Gravel, coarse	12	187	Sand	45	980
Shale	53	240	Not reported	100	1,080
Sand	80	320	Shale	180	1,260
Shale	70	390	Shale	30	1,290
Sand	14	404	Sand	20	1,310
Shale	46	450	Shale, sandy	40	1,350
Sand and sandy shale	80	530	Sand	10	1,360
Shale	30	560	Sand, coarse	20	1,380
Sand	35	595			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-351. Esso Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	50	50	Sand	31	1,485
Shale	5	55	Clay	360	1,845
Clay, yellow	240	295	Shale, sandy	15	1,860
Sand	143	438	Clay	35	1,895
Clay	42	480	Shale	10	1,905
Sand	184	664	Clay	25	1,930
Shale	136	800	Sand	154	2,084
Clay, hard	50	850	Clay	246	2,330
Sand	10	860	Sand	104	2,434
Clay	160	1,020	Clay	13	2,447
Sand and shale	12	1,032	Sand	13	2,460
Sand	58	1,090	Clay	88	2,548
Clay	32	1,122	Shale	20	2,568
Sand	162	1,284	Clay	33	2,601
Clay	170	1,454			

EB-370. Kaiser Aluminum and Chemical Corp., Baton Rouge, Ls., T. 6 S., R. 1 W.

Clay, blue; shale	285	285	Shale, hard	339	1,635
Shale, sandy	59	344	Sand	31	1,666
Shale	78	422	Gumbo	66	1,732
Sand	222	644	Shale	78	1,810
Shale	271	915	Sand	105	1,915
Sand	46	961	Shale, streaky	337	2,252
Shale	84	1,045	Sand	65	2,317
Sand, hard	108	1,153	Shale	38	2,355
Shale	143	1,296			

EB-371. Copolymer Corp., Baton Rouge, La., T. 6 S., R. 1 W.

Clay	100	100	Sand	92	1,983
Shale; atreaks of sand	466	566	Shale and gumbo	319	2,302
Sand	86	652	Sand	50	2,352
Shale and gumbo	456	1,108	Shale	213	2,565
Sand	116	1,224	Sand	10	2,575
Shale and gumbo	178	1,402	Ssnd, fine	23	2,598
Sand	66	1,468	Gumbo	15	2,613
Shale and gumbo	423	1,891			

EB-384. Mr. McVay, Baton Rouge, La., T. 5 S., R. 1 W.

Clay, surface	80	80	Clay	159	1,102
Sand	36	116	Sand	118	1,220
Clay	69	185	Clay, very hard	457	1,677
Sand, coarse	240	425	Rock	4	1,681
Clay	345	770	Sand and shale	19	1,700
Sand	15	785	Sand	29	1,729
Clay	15	800	Clay	71	1,800
Sand	55	855	Shale, sandy	5	1,805
Clay	10	865	Sand, fine to medium	111	1,916
Sand	78	943	Shale, hard	3	1,919

EB-398. Esao Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Clay, surface	200	200	Shale	47	1,002
Clay, blue	80	280	Sand	32	1,034
Sand	24	304	Shale	56	1,090
Clay	24	328	Sand, fine	12	1,102
Sand	90	418	Shale	78	1,180
Clay	72	490	Sand	112	1,292
Sand	83	573	Shale	218	1,510
Clay, hard	27	600	Sand	61	1,571
Sand	44	644	Shale	179	1,750
Clay	2	646	Sand and ahale	5	1,755
Sand	14	660	Sand	10	1,765
Clay	2	662	Clay, tough	52	1,817
Sand	71	733	Sand and ahale	26	1,843
Clay	41	774	Sand	7	1,850
Sand	6	780	Clay, hard	120	1,970
Clay, soft	20	800	Sand and shale	10	1,980
Sand	15	815	Sand	210	2,190
Shale	60	875	Clay, hard	195	2,385
Sand, fine	20	895	Sand	5	2,390
Shale, soft	5	900	Sand	70	2,460
Sand	55	955	Clay	5	2,465

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-433. John East, Plains, La., T. 4 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickneas (feet)	Depth (feet)
Shale	163	163	Shale	96	820
Sand	21	184	Sand	118	938
Shale	102	286	Shale	108	1,046
Sand	60	346	Sand	258	1,304
Shale	54	400	Shale	425	1,729
Sand	62	462	Sand	43	1,772
Shale	237	699	Shale	45	1,817
Sand	25	724	Sand	90	1,907

EB-444. Baton Rouge Water Worka Co., Baton Rouge, La., T. 7 S., R. 1 W.

Clay, surface	90	90	Sand and shale	15	1,275
Clay, blue	5	95	Sand, fine	20	1,295
Clay, gray	35	130	Shale	11	1,306
Sand	5	135	Limestone	4	1,310
Clay	35	170	Shale	190	1,500
Sand	72	242	Limestone	15	1,515
Sand	93	335	Clay	15	1,530
Clay	10	345	Limestone rock	3	1,533
Sand and shale	9	354	Clay	15	1,548
Clay	36	390	Limestone	3	1,551
Sand, fine	12	402	Clay	59	1,610
Clay	8	410	Limestone	5	1,615
Sand	26	436	Shale	5	1,620
Clay	89	525	Limestone	15	1,635
Sand	15	540	Shale	13	1,648
Clay	18	558	Limestone	5	1,653
Sand, fine	14	572	Clay	12	1,665
Clay	23	595	Sand and shale	7	1,672
Sand and shale	13	608	Shale	33	1,705
Clay	42	650	Limestone	4	1,709
Limestone	2	652	Shale	23	1,732
Clay	24	676	Limestone	16	1,748
Limestone	2	678	Clay	22	1,770
Sand and shale	10	688	Sand and shale	45	1,815
Sand	55	743	Limestone	5	1,820
Clay	34	777	Shale	95	1,915
Sand	113	890	Clay, hard	8	1,923
Clay	20	910	Limestone	10	1,933
Rock, hard	2	912	Clay	57	1,990
Limestone	23	935	Sand and shale	7	1,997
Clay	20	955	Sand	124	2,121
Sand	13	968	Clay, soft	72	2,193
Clay	22	990	Sand	9	2,202
Limestone	2	992	Clay	3	2,205
Clay	33	1,025	Limestone	2	2,207
Limestone	10	1,035	Clay	5	2,212
Clay	5	1,040	Sand	4	2,216
Limestone	2	1,042	Clay	3	2,219
Sand and shale	133	1,175	Sand	6	2,225
Clay	64	1,239	Clay	8	2,233
Rock	2	1,241	Sand	4	2,237
Sand	19	1,260	Clay, hard	16	2,253

EB-445. Baton Rouge Country Club, Baton Rouge, La., T. 7 S., R. 1 E.

Shale	128	128	Sand, medium coarse	25	465
Sand	20	148	Sand, coarse	21	486
Shale, sandy	44	192	Sand, coarse	14	500
Shale and shell	20	212	Gravel	18	518
Shale	176	388	Shale	86	604
Sand, fine, white	52	440			

EB-468. A. M. Holden, Baton Rouge, La., T. 5 S., R. 1 E.

Topsoil; and clay, yellow-brown	90	90	Shale, grayish with brown streaks	293	810
Clay and silt	45	135	Sand with shale streaks	90	900
Clay, gray	35	170	Sand	80	980
Sand	82	252	Shale, blue-black	145	1,125
Shale, blue-gray	78	330	Shale, ssndy	32	1,157
Sand	22	352	Sand	35	1,192
Shale, gray	120	472	Sand, shale streaks	23	1,215
Shale with sand streaks	45	517	Sand	85	1,300

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-468. A. M. Holden, Baton Rouge, La., T. 5 S., R. 1 E.—Continued

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Shale, black	62	1,362	Sand	170	2,037
Sand	55	1,417	Shale, yellow and black	78	2,115
Shale, black with sandy streaks	135	1,552	Shale, sandy streaks	22	2,137
Sand	96	1,648	Shale, brown	108	2,245
Shale, black	39	1,687	Sand	23	2,268
Sand	28	1,715	Shale	4	2,272
Shale, black	152	1,867	Sand	158	2,430

EB-492. Smith Bryant, Baton Rouge, La., T. 6 S., R. 1 W.

Clay, buff	63	63	Clay, buff to tan, blue-gray, sticky	63	210
Clay, tan	42	105	Clay, blue-gray	105	315
Clay; tan to dark brown with slight streaks of sand	21	126	Sand, glauconite	13	328
Clay, blue-gray	21	147			

EB-493. Rock Ice Co., Inc., Baton Rouge, La., T. 7 S., R. 1 W.

Shale	197	197	Sand	23	514
Sand	32	229	Shale	40	554
Shale	31	260	Sand	55	609
Sand and gravel	85	345	Shale	75	684
Shale	21	366	Sand	20	704
Sand	42	408	Shale	21	725
Shale	83	491			

EB-508. David Mills, Plains, La., T. 4 S., R. 1 W.

Surface	50	50	Shale	278	830
Sand	181	231	Sand	48	878
Shale	294	525	Shale	163	1,041
Sand	27	552	Sand, coarse	99	1,140

EB-516. C. Hulings, Plains, La., T. 4 S., R. 1 W.

Clay	60	60	Shale	360	660
Sand and gravel	118	178	Clay, hard	40	700
Clay	42	220	Shale	310	1,010
Sand	80	300	Sand	60	1,070

EB-517. Louisiana Department of Education, Scotlandville, La., T. 6 S., R. 1 W.

Surface	105	105	Shale	8	1,753
Shale	100	205	Sand	6	1,759
Sand	120	325	Shale	43	1,802
Shale	264	589	Sand, fine	51	1,853
Sand	17	606	Sand and shale	20	1,873
Sand and shale	183	789	Sand	41	1,914
Shale	167	956	Shale	25	1,939
Sand	11	967	Sand	44	1,983
Shale	107	1,074	Shale	202	2,185
Sand	83	1,157	Sand	4	2,189
Shale	13	1,170	Shale with sand breaks	103	2,292
Sand	45	1,215	Shale	190	2,482
Shale	493	1,708	Sand	108	2,590
Sand	37	1,745			

EB-530. Esso Standard Oil Co., Baton Rouge, La., T. 6 S., R. 1 W.

Clay, surface	98	98	Clay	6	199
Sand	95	193			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

EAST BATON ROUGE PARISH—Continued

EB-548. Gulf States Utilities Co., Baton Rouge, La., T. 6 S., R. 1 W.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Mud, soft	65	65	Limestone and shale	10	1,140
Clay, surface	145	210	Sand	50	1,190
Sand	14	224	Shale	5	1,195
Clay	34	258	Sand	5	1,200
Sand	167	425	Shale	3	1,203
Clay	5	430	Sand	9	1,212
Sand, fine, and limestone	80	510	Limestone	8	1,220
Sand, loose, and gravel	110	620	Shale	360	1,580
Sand	32	652	Limestone	20	1,600
Shale	109	761	Shale	25	1,625
Limestone	4	765	Limestone	3	1,628
Shale	13	778	Shale	22	1,650
Sand	16	794	Sand and shale	10	1,660
Shale	30	824	Limestone	19	1,679
Sand and gravel	55	879	Sandstone	79	1,758
Clay	4	883	Shale	4	1,762
Limestone	1	884	Limestone	25	1,787
Shale	26	910	Shale	45	1,832
Limestone	3	913	Sand and shale	18	1,850
Shale	17	930	Sand	232	2,082
Sand	99	1,029	Limestone	3	2,085
Limestone	4	1,033	Shale	235	2,320
Shale	7	1,040	Shale, sandy	68	2,388
Limestone	2	1,042	Shale, hard	147	2,535
Shale	8	1,050	Shale and sand	10	2,545
Sand	6	1,056	Shale	27	2,572
Limestone	2	1,058	Sand and shale	10	2,582
Shale	39	1,097	Shale	98	2,680
Limestone	2	1,099	Sand and shale	10	2,690
Shale	9	1,108	Shale, hard	25	2,715
Limestone	2	1,110	Sand and shale	15	2,730
Shale	6	1,116	Sand, fine	7	2,737
Limestone	2	1,118	Sand, coarse	22	2,759
Shale	5	1,123	Shale	50	2,809
Limestone	1	1,124	Shale, sandy	13	2,822
Shale	6	1,130	Sand, bottom	42	2,864

WEST BATON ROUGE PARISH

WBR-4. Town of Port Allen, Port Allen, La., T. 7 S., R. 12 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Clay	20	20	Shale, sandy	40	1,240
Sand, fine and black	80	100	Sand, fine	10	1,250
Sand and gravel	220	320	Sand, coarse	10	1,260
Clay	20	340	Sand and gravel	45	1,305
Sand and gravel	80	420	Sand, medium	27	1,332
Clay	185	605	Clay, tough	228	1,560
Sand and gravel	165	770	Shale, sandy	5	1,565
Shale	70	840	Clay	10	1,575
Sand, fine	25	865	Sand	5	1,580
Sand, coarse	20	885	Sand and gravel	85	1,665
Clay	135	1,020	Clay	90	1,755
Sand and gravel	20	1,040	Shale	15	1,770
Clay	80	1,120	Sand, coarse; gravel	25	1,795
Sand and gravel	20	1,140	Clay	15	1,810
Clay	40	1,180	Sand, coarse; gravel	53	1,863
Shale, sandy	20	1,200			

WBR-10. Poplar Grove Plantation, Port Allen, La., T. 7 S., R. 12 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Not reported	95	95	Sand	135	908
Sand	129	224	Clay	189	1,097
Clay	63	287	Sand, hard	38	1,135
Sand	41	328	Sand, loose	17	1,152
Clay	115	443	Sand, hard	33	1,185
Sand	44	487	Sand, loose	27	1,212
Clay	38	525	Clay	736	1,948
Sand	84	609	Gravel	9	1,957
Clay	49	658	Clay	60	2,017
Sand	42	700	Sand	65	2,082
Clay	73	773			

Table 6.—*Drillers' logs of representative wells in the Baton Rouge area*—Continued

WEST BATON ROUGE PARISH—Continued

WBR-23. Cinclare Central Factory, Cinclare, La., T. 8 S., R. 12 E.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Surface	35	35	Sand	110	1,102
Not reported	5	40	Clay	8	1,110
Clay, blue	34	74	Sand	10	1,120
Sand, fine	11	85	Clsy	148	1,268
Clay	10	95	Sand, fine	30	1,298
Sand, fine	70	165	Clay	106	1,404
Sand and gravel	125	290	Sand	5	1,409
Clay	7	297	Clay	121	1,530
Sand and gravel	221	518	Sand	94	1,624
Clay	19	537	Clay	144	1,768
Sand	68	605	Sand	48	1,816
Clay	5	610	Clay	239	2,055
Sand	5	615	Sand and shale	10	2,065
Clay	30	645	Sand	33	2,098
Sand	77	722	Clay	10	2,108
Clay	158	880	Sand	54	2,162
Sand	27	907	Clay	4	2,166
Clay	85	992			

INDEX