Logs of Wells and Test Holes in Sedgwick County, Kansas

By Charles W. Lane
and Don E. Miller

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of Kansas

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Prepared as part of the cooperative ground-water program in Kansas conducted by the United States Geological Survey, the State Geological Survey of Kansas, the Division of Water Resources of the Kansas State Board of Agriculture, and the Environmental Health Services of the Kansas State Department of Health.

December 1965

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LOGS OF WELLS AND TEST HOLES IN SEDGWICK COUNTY, KANSAS

The logs of 369 wells and test holes in Sedgwick County, Kansas, are given on the following pages. The samples from test holes drilled by the State Geological Survey of Kansas and a part of those drilled by private contractors and the City of Wichita were examined and logged in the field. The logs that are designated "Sample logs" were prepared after microscopic examination of the samples in the laboratory and comparison with the field log.

A (T) following the figure for "altitude of land surface" indicates the altitude was determined from modern $7\frac{1}{2}$-minute topographic maps having 10-foot contour intervals. Other altitudes were determined by field measurements.

Locations of these wells and test holes can be found on Plate 1 of "Geology and Ground-Water Resources of Sedgwick County, Kansas," by C. W. Lane and D. E. Miller, Bulletin 176, published by the State Geological Survey of Kansas in 1965.

25-1E-5ddd.--*Sample log of test hole in SE SE SE sec. 5, T 25 S, R 1 E, on north side of road by first small hedge tree; 150 feet west of Highway 81; augered September 1958. Altitude of land surface, 1,409.2 feet; depth to water, 20-25 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan.....	5	5
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, some fine gravel; quartzose, very silty, tan.....	5	10
Sand, fine to coarse, some fine gravel, very silty, tan; quartzose.....	5	15
Sand, fine to coarse, mostly fine to medium; some shale fragments, with streaks of tan silt.....	5	20
Clay, silty, reddish-brown, and reddish-tan sandy silt.....	5	25
Silt, very sandy at base, light-tan.....	5	30
Silt, sandy, light-tan.....	8	38
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	39

25-1E-19abb.--*Sample log of test hole in NW NW NE sec. 19, T 25 S, R 1 E, on south side of road, 5 feet east of half-section fence; augered September 1958. Altitude of land surface, 1,379.0 feet; depth to water, 13.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits)		
Silt, sandy, dark reddish-tan, some caliche.	5	5
Silt, sandy, dark-tan.....	10	15
Sand, fine to coarse, very silty; some thin gray silt streaks.....	5	20
Silt, very sandy, light grayish-tan.....	5	25
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	5	30

25-1E-22bbb.--*Sample log of test hole in NW NW NW sec. 22, T 25 S, R 1 E, on east side of road, 60 feet south of center line of east-west road; augered September 1958. Altitude of land surface, 1,437.2 feet; depth to water, 13.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, dark-gray.....	5	5
Silt, sandy, reddish-tan to light-tan; some caliche pebbles.....	5	10
Silt, light-tan; some caliche pebbles.....	5	15
Silt, sandy, light grayish-tan; some caliche pebbles.....	8	23
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	24

25-1E-29aab.--*Sample log of test hole in NW NE NE sec. 29, T 25 S, R 1 E, on south side of road, opposite farm lane, 0.2 mile west of Highway 81; augered September 1958. Altitude of land surface, 1,399.2 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, reddish-brown.....	5	5
Silt, sandy, reddish-tan.....	7	12
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	13

25-1E-30ddd.--*Sample log of test hole in SE SE SE sec. 30, T 25 S, R 1 E, on west road shoulder, 60 feet north of center line of east-west road; augered September 1958. Altitude of land surface, 1,368.5 feet; depth to water, 17.2 feet.*

	Thickness, feet	*Depth, feet*
Road fill.....	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, reddish-brown.....	2	5
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to medium, silty.....	5	10
Sand, fine to coarse, mostly fine.....	5	15
Sand, fine to coarse; quartzose; much tan silt near base.....	5	20
Sand, fine to coarse, mostly fine to medium, silty, tan.....	7	27
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Wellington Formation		
Shale, gray.....	1	28

25-1E-33aaa.--*Sample log of test hole in NE NE NE sec. 33, T 25 S, R 1 E, on east side of road, 100 feet south of east-west road; augered September 1958. Altitude of land surface, 1,389.0 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, very sandy, clayey, dark reddish-tan..	7	7
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	8

25-1W-1bbb.--*Sample log of test hole in NW NW NW sec. 1, T 25 S, R 1 W, on east side of road, 50 feet south of center line of east-west road; augered September 1958. Altitude of land surface, 1,390.3 feet; depth to water, 24.4 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages(loess)		
Silt, sandy, dark-tan.....	5	5
Silt, sandy, reddish-tan; contains caliche..	5	10
Silt, some sand, reddish-tan.....	5	15
Silt, some sand, reddish-tan; some caliche pebbles.....	5	20
Silt, tan; some caliche pebbles.....	5	25
Silt, tan; very sandy at base.....	5	30
Silt, very sandy, grayish-tan.....	4	34
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, very silty, gray to pink.....	4	38
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, hard, no returns from bit.....	5	43

25-1W-4bbc.--*Driller's log of test hole in SW NW NW sec. 4, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,369.6 feet; depth to water, 20.9 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	Depth, feet
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray	2	2
Silt, sandy, tan; some caliche pebbles	2	4
Silt, sandy, dark-tan	5	9
Silt, dark-gray	3	12
Silt, sandy, tan	1	13
Silt, sandy, gray	6	19
Silt, clayey, gray	5	24
Silt, sandy and clayey, gray	5	29

25-1W-4cbb.--*Sample log of test hole in NW NW SW sec. 4, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,372.8 feet; depth to water, 18.7 feet.*

	Thickness, feet	Depth, feet
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan	1	4
Sand, fine to coarse, much fine to medium, some fine gravel, arkosic; some grayish-tan silt	15	19
Sand, fine to coarse with fine to coarse gravel; arkosic, much sandy grayish-tan silt	5	24
Silt, very sandy, grayish-tan; some sand and gravel	5	29
Silt, very sandy, light tannish-gray	10	39

25-1W-4ccb.--*Driller's log of test hole in NW SW SW sec. 4, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,373.5 feet; depth to water, 21.1 feet.*

	Thickness, feet	Depth, feet
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine	1	4
Sand, fine to coarse, some fine to medium; arkosic, gray	24	28
Silt, clayey, gray	6	34

25-1W-6ccc.--*Sample log of test hole M34T in SW SW SW sec. 6, T 25 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface, 1,383.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-tan	5	5
Silt, sandy, some fine gravel, grayish-tan	5	10
Sand, fine to coarse, fine to medium gravel; arkosic	10	20
Sand, fine to coarse, fine to coarse gravel; arkosic	5	25
Sand, fine to coarse, fine to coarse gravel; arkosic with streaks of sandy gray silt	10	35
Sand, fine to coarse, and fine to coarse gravel	20	55
Sand, fine to coarse, fine to coarse gravel; streaks of gray, carbonaceous, sandy silt	7	62
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, grayish-tan to gray; some caliche and bone fragments	8	70
Silt, grayish-tan to gray; some caliche, thin streaks of fine to coarse sand and fine gravel, quartzose	15	85
Silt, sandy, grayish-tan; some caliche pebbles, streaks of gray quartz sand	5	90
Sand, fine to coarse, fine gravel; quartzose	5	95
Silt, sandy, light-gray	5	100
Sand, fine to coarse and fine gravel, yellowish-gray; quartzose	20	120
Sand, fine to coarse and fine gravel, yellowish-gray; quartzose, streaks of sandy, gray to tan, clayey silt	10	130
Sand, fine to coarse, fine gravel, yellowish-gray; quartzose	10	140
Sand, fine to coarse, fine gravel, yellowish-gray; quartzose, clayey tan silt streaks	7	147
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	3	150

25-1W-7baa.--*Sample log of test hole M35T in NE NE NW sec. 7, T 25 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface, 1,383.1 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	Depth, feet
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan	5	5
Sand, fine to coarse, fine to coarse gravel; arkosic	10	15
Sand, fine to coarse, fine to coarse gravel; arkosic, some grayish-tan sandy silt	10	25
Sand, fine to coarse, fine to coarse gravel; arkosic	39	64
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, fine gravel, yellowish-gray; quartzose, some sandy gray silt in lower 5 feet	11	75
Sand, fine to coarse, fine gravel, yellowish-tan; quartzose, streaks of sandy light-gray silt with caliche pebbles present	10	85
Silt, sandy, light grayish-tan; caliche pebbles present	10	95
Sand, fine to coarse, fine gravel; gray, quartzose, some thin gray sandy silt streaks	12	107
Silt, sandy, grayish-tan; sand streaks present	5	112
Sand, fine to coarse, fine gravel, yellowish-gray; quartzose	5	117
Silt, sandy, light-gray; many streaks of fine to coarse sand and fine gravel; bedrock rubble in lower 15 feet	21	138
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	4	142

25-1W-7bcc.--*Sample log of well M36 in SW SW NW sec. 7, T 25 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, January 1958. Altitude of land surface, 1,385.4 feet; depth to water, 26.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-tan; some caliche	7	7
Sand, fine to coarse, fine gravel; arkosic	3	10
Sand, fine to coarse, fine gravel; arkosic, much dark and quartz gravel	10	20
Sand, fine to coarse, fine to coarse gravel; arkosic	10	30

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, fine to coarse gravel.	23	53
Sand, fine to coarse, fine to medium gravel, gray; arkosic, much gray granite, gray quartz and other dark rocks, streaks of gray silt.....	7	60
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, clayey, gray to grayish-tan....	5	65
Sand, fine to coarse, and fine to coarse gravel, grayish-pink; arkosic, much quartz.....	5	70
Sand, fine to coarse, and fine gravel; arkosic, streaks of grayish-tan clayey silt, some caliche pebbles in lower 5 feet.....	10	80
Sand, fine to coarse, and fine gravel; all quartz, many caliche pebbles.....	5	85
Silt, sandy, dark-gray to tan.....	5	90
Silt, sandy, light grayish-tan.....	15	105
Sand, fine to coarse, and fine to medium gravel; some dark and arkosic gravel; mostly quartz; quartzite pebbles present.	5	110
Sand, fine to coarse, fine gravel; dark and arkosic gravel, white sandstone fragments; some sandy, tan silt and tan clay in lower 5 feet.....	15	125
Sand, fine to coarse, fine gravel; dark and arkosic gravel, many large siltstone fragments.....	15	140
Sand, fine to coarse; much gray and yellow silt and gray and pink clay; no clay in lower 5 feet.....	10	150
Silt, sandy, clayey, light grayish-tan to pink.....	5	155
Silt, sandy, light grayish-tan to pink.....	10	165
Silt, sandy, clayey, tan, pink and grayish-tan.....	10	175
Sand, fine to coarse, and fine gravel; yellowish-tan; mostly quartz, some arkosic.....	5	180
Sand, fine to coarse, and fine gravel, yellowish-tan; some Cretaceous ironstone.	3	183
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, weathered.....	7	190

25-1W-9bcc.--*Driller's log of test hole in SW SW NW sec. 9, T 25 S, R 1 W; augered May 1955. Altitude of land surface 1,370.2 feet; depth to water, 15.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse	4	6
Silt, clayey	2	8
Sand, fine to coarse	2	10
Silt	2	12
Sand, fine to coarse, and fine to medium gravel; arkosic, much quartz	5	17
Sand, fine to coarse, and fine gravel, gray	7	24
Silt, clayey, gray	1	25
Silt, sandy, tan	4	29
Sand, fine to coarse, silty, gray	16	45

25-1W-9ccc.--*Sample log of test hole in SW SW SW sec. 9, T 25 S, R 1 W; augered 1955. Altitude of land surface, 1,372.5 feet; depth to water, 18.9 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, tan	3	6
Sand, fine to coarse, and fine gravel; arkosic, some tan silt	8	14
Sand, fine to coarse, and fine to coarse gravel; some tan sandy silt	35	49

25-1W-9daa.--*Driller's log of test hole in NE NE SE sec. 9, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,359.4 feet; depth to water, 18.5 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan	3	6
Silt, dark-gray	3	9
Sand, fine to medium	10	19
Sand, fine to coarse, and fine to medium gravel, pink; arkosic	30	49

25-1W-9dcc.--*Driller's log of test hole in SW SW SE sec. 9, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,369.7 feet; depth to water, 18.5 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray	2	4
Sand, fine to coarse, and fine to medium gravel, pink; arkosic	20	24
Silt, clayey, brown to gray; much carbonaceous material	5	29
Sand, fine to coarse, and fine gravel, silty, gray	16	45

25-1W-10ccc.--*Sample log of test hole for observation well 125 in SW SW SW sec. 10, T 25 S, R 1 W; drilled July 1955. Altitude of land surface, 1,360.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-gray	5	5
Silt, sandy, medium-gray	10	15
Silt, clayey, sandy, light- to medium-gray	9	24
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse; quartzose, some white, and a little pink feldspar	6	30
Sand, fine to coarse, and fine to medium gravel; some white and pink feldspar	15	45
Sand, fine to coarse, more fine to medium gravel; gravel is feldspar, some caliche pebbles	5	50
Sand, fine to coarse, fine to medium feldspar gravel; many streaks of sandy gray silt with caliche pebbles	15	65
Sand, fine to coarse; quartzose, many streaks of sandy, gray silt with caliche	7	72
Silt, very sandy, light-tan	5	77
Sand, fine to coarse; quartzose	1	78
Silt, sandy, light-tan	2	80
Sand, fine to coarse, mostly fine to medium; many streaks of sandy tan silt	12	92
Sand, fine to coarse, grayish-tan; quartzose	5	97
Silt, sandy, tan	2	99

	Thickness, feet	Depth, feet
Sand, fine to coarse, grayish-tan; quartzose	6	105
Sand, fine to coarse and fine gravel, grayish-tan; quartzose; shale fragments from Dakota Formation and Permian System	15	120
Sand, fine to coarse, fine gravel, grayish-tan; streaks of sandy tan silt	3	123
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	8	131

25-1W-13aaa.--*Sample log of test hole in NE NE NE sec. 13, T 25 S, R 1 W, on south side of road, 75 feet west of center line of north-south road; augered September 1958. Altitude of land surface, 1,373.3 feet; depth to water 21.5 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, reddish-brown	10	10
Silt, slightly sandy, reddish-brown	5	15
Silt, sandy, dark-tan	5	20
Sand, fine to coarse, very silty, tan	13	33
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	34

25-1W-13bbb.--*Sample log of test hole in NW NW NW sec. 13, T 25 S, R 1 W, on south side of road, 100 feet east of north-south road, under tree; augered September 1958. Altitude of land surface, 1,369.6 feet; depth to water, 17.6 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown	5	5
Silt, sandy, clayey, dark grayish-tan	5	10
Silt, sandy, grayish-tan to tan; very sandy at base	5	15
Silt, sandy, tan	2	17
Sand, fine to coarse and fine gravel; arkosic, and much tan silt	8	25
Sand, fine to coarse, and fine gravel; arkosic, some tan silt	19	44

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....		44

25-1W-16aaa.--*Driller's log of test hole in NE NE NE sec. 16, T 25 S, R 1 W; augered May 1955.*

	Thickness, feet	Depth, feet
Road fill.....	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan.....	3	6
Silt, dark-gray.....	2	8
Silt, sandy, tan.....	6	14
Silt, sandy, grayish-green; organic, with smell of decaying vegetation.....	5	19
Silt, clayey, brown; organic.....	5	24
Silt, brown.....	5	29
Silt, clayey, grayish-green.....	5	34
Sand, fine to coarse, silty, gray.....	15	49

25-1W-16daa.--*Driller's log of test hole in NE NE SE sec. 16, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,361.4 feet; depth to water, 18.6 feet.*

	Thickness, feet	Depth, feet
Road fill.....	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, tan.....	1	4
Sand, fine to medium.....	5	9
Sand, fine to coarse, and fine to coarse gravel, pink; arkosic.....	19	28
Silt, clayey, gray; contains carbonaceous material.....	4	32
Sand, fine to coarse, and fine gravel; quartzose, gray.....	17	49

25-1W-17cbb.--*Sample log of test hole 39T in NW NW SW sec. 17, T 25 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, December 1957. Altitude of land surface, 1,374.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan; few caliche pebbles.....	7	7
Sand, fine to medium; arkosic; contains much mica and magnetite.....	3	10
Silt, sandy, clayey, light-gray.....	9	19
Sand, fine to coarse, and fine gravel.....	2	21
Sand, fine to coarse, and fine to medium gravel; arkosic.....	24	45
Sand, fine to coarse, some fine to medium gravel.....	5	50
Sand, fine to coarse, and fine gravel.....	5	55
Sand, fine to coarse; much fine to medium gravel in upper 5 feet.....	10	65
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; 90 percent quartz, lower 5 feet contains mortar bed fragments.....	20	85
Sand, fine to coarse, much fine gravel.....	3	88
Silt, sandy, tan.....	1	89
Sand, fine to coarse, and fine gravel; 90 percent quartz.....	20	109
Silt, very sandy, gray.....	7	116
Sand, fine to coarse, fine to coarse gravel; arkosic, some fragments of Cretaceous material, and streaks of grayish-tan silt	11	127
Silt, sandy, gray.....	2	129
Sand, fine to coarse, and fine gravel; much derived from Cretaceous rocks; thin streaks of grayish-tan clay and silt.....	16	145
Sand, fine to coarse, fine to medium gravel; streaks of grayish-tan silt.....	10	155
Clay, gray.....	4	159
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, dark-gray.....	11	170

25-1W-17ccc.--*Sample log of test hole 40T in SW SW SW sec. 17, T 25 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, December 1957. Altitude of land surface, 1,373.7 feet; depth to water, 15.5 feet.*

	Thickness, feet	*Depth, feet*
Soil, sandy, gray-brown.....	2	2
NEOGENE		
Upper Pleistocene Subseries		

	Thickness, feet	*Depth, feet*
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-tan; some caliche.....	4	6
Sand, fine to coarse and fine to coarse gravel; arkosic.....	34	40
Sand, fine to coarse, and fine to medium gravel; arkosic.....	11	51
Silt, gray.....	1	52
Sand, fine to coarse, and fine to coarse gravel; arkosic, contains dark gravel....	8	60
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, some fine gravel; 95 percent quartz.....	3	63
Silt, gray to tan.....	1	64
Sand, fine to coarse, and fine gravel; quartz, some patches of arkosic gravel...	6	70
Silt, sandy, clayey, light grayish-tan; very sandy in lower 4 feet.....	14	84
Sand, fine to coarse, some fine gravel, yellowish-tan; 95 percent quartz; some material derived from Dakota Formation, some tan silt in lower 5 feet.....	16	100
Sand, fine to coarse, fine gravel, yellowish-tan; 95 percent quartz, pebbles of sandstone and quartzite, some clayey tan silt in lower 10 feet.....	15	115
Sand, fine to coarse, and fine gravel, yellowish-tan; quartzose, pebbles derived from Dakota Formation, some medium gravel in lower 5 feet.....	10	125
Sand, fine to coarse, fine gravel, yellowish-tan; many tan silt streaks.....	5	130
Clay, very silty, grayish-tan to gray; shale fragments present.....	5	135
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	5	140

25-1W-18abb.--*Sample log of test hole 37T in NW NW NE sec. 18, T 25 S, R 1 W; drilled by the City of Wichita, February 1958. Altitude of land surface, 1,377.2 feet; depth to water, 19.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-brown.....	3	3

	Thickness, feet	*Depth, feet*
Silt, very sandy, tan	3	6
Silt, clayey, sandy, grayish-tan	8	14
Sand, fine to coarse, and fine to coarse arkosic gravel	37	51
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, grayish-tan	2	53
Sand, fine to coarse, grayish-white; quartzose	14	67
Silt, sandy, clayey, gray to tan; some caliche	2	69
Sand, fine to coarse, and fine gravel; quartzose	3	72
Silt, clayey, sandy, grayish-tan; contains caliche	2	74
Sand, fine to coarse, fine gravel; quartzose	5	79
Silt, sandy, grayish-tan to tan	6	85
Silt, sandy, grayish-tan to pinkish-tan; contains streaks of sand	12	97
Sand, fine to coarse, and fine gravel; grayish-white; quartzose, many streaks of tan sandy silt	19	116
Silt, sandy, clayey, tan, sand streak at 118 to 119 feet	6	122
Sand, fine to coarse, and fine gravel [Dakota(?)], yellowish-tan	10	132
Silt, clayey, sandy, tan; thin sand streaks	11	143
Sand, fine to coarse, and fine gravel, yellowish-tan; quartzose	8	151
Silt, clayey, sandy, tan	4	155
Sand, fine to coarse, and fine gravel, yellowish-tan; quartzose	8	163
Silt, sandy, tan	1	164
Sand, fine to coarse, and fine gravel, yellowish-tan; quartzose	3	167
Silt, sandy, clayey, grayish-tan to yellowish-tan	3	170
Sand, fine to coarse, and fine gravel, yellowish-tan; quartzose, contains material derived from Dakota Formation; thin clay streak at bottom	6	176
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	4	180

25-1W-21daa.--*Driller's log of test hole in NE NE SE sec. 21, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,360.2 feet; depth to water, 18.1 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan	9	12
Silt, clayey, grayish-green; some organic material	7	19
Silt, clayey, gray and brown	6	25
Sand, fine to coarse, silty, gray; quartzose	19	44

25-1W-22aaa.--*Sample log of test hole in NE NE NE sec. 22, T 25 S, R 1 W, on west side of road, 75 feet south of farm drive; augered September 1958. Altitude of land surface, 1,361 feet; depth to water, 12.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray to brown	5	5
Silt, dark-tan	5	10
Silt, dark-tan; some fine sand	5	15
Silt, dark-tan; 18 to 20 feet is fine sand, silty	5	20
Sand, fine to medium, very silty	5	25
Sand, fine to coarse, silty	5	30
Sand, fine to coarse, and fine to medium silty gravel	33	63
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	2	65

25-1W-22dcc.--*Driller's log of test hole in SW SW SE sec. 22, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,359 feet; depth to water, 8.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, black	2	2
Silt, brown	1	3
Silt, sandy, tan	6	9
Silt, clayey, tan	5	14
Silt, clayey, sandy, gray	5	19

	Thickness, feet	*Depth, feet*
Silt, clayey, sandy, grayish-green.....	5	24
Sand, fine to coarse, fine gravel, silty, gray; some possible quartzite present....	21	45

25-1W-23abb.--*Sample log of test hole in NW NW NE sec. 23, T 25 S, R 1 W; augered by the City of Wichita, 1959. Altitude of land surface, 1,360(T) feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray.....	5	5
Sand, fine to coarse, and fine to medium gravel, pinkish-gray; arkosic, much quartz; streaks of gray carbonaceous silt in lower 5 feet.....	10	15
Sand, fine to medium, silty.....	5	20
Silt, sandy, gray.....	3	23
Sand, fine to coarse, and fine to medium gravel, grayish-pink; arkosic.....	17	40

25-1W-25aaa.--*Sample log of test hole in NE NE NE sec. 25, T 25 S, R 1 W, on south side of road, 75 feet west of north-south road; augered September 1958. Altitude of land surface, 1,352.7 feet; depth to water, 14.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, clayey, dark-brown.....	5	5
Silt, sandy, tan.....	7	12
Sand, fine.....	1	13
Silt, sandy, tan.....	2	15
Sand, fine to coarse, and fine gravel, very silty; arkosic.....	10	25
Sand, fine to coarse, and fine gravel; arkosic, much quartz.....	9	34
Silt, sandy, gray.....	1	35
Sand, fine to coarse, and fine gravel; some silt, more quartz in lower 7 feet.....	12	47
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	48

25-1W-25cba.--*Sample log of test hole in NE NW SW sec. 25, T 25 S, R 1 W; augered by City of Wichita, July 1958. Altitude of land surface, 1,353.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, silty, black	4	4
Clay, silty, brown	12	16
Sand to coarse gravel, orangish-tan	8	24
Sand to fine gravel, tan	8	32
Clay, green	1	33
Sand, fine to coarse, gray	6	39
Sand and fine gravel, grayish-tan	5	44
Sand to medium gravel, grayish-tan	8	52
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellowish-green	1	53

25-1W-25ddc.--*Sample log of test hole in SW SE SE sec. 25, T 25 S, R 1 W; augered by City of Wichita, July 1958. Altitude of land surface, 1,324 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, tan to brown	3	6
Silt, tan, clayey	3	9
Silt and clay, tan	8	17
Sand, fine, yellowish-tan; dirty, coarser in lower 4 feet	7	24
Sand, fine to coarse, very silty, yellowish-tan	10	34
Sand, fine to medium, grayish-tan	8	42
Clay and sand, gray	2	44
Sand and fine gravel	2	46
Sand, gravel and clay layers	3	49
Sand to fine gravel, gray	5	54
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellowish-green	1	55

25-1W-26bbb.--*Driller's log of test hole in NW NW NW sec. 26, T 25 S, R 1 W, on the east edge of north-south road, even with center of road going west; augered July 1957. Altitude of land surface, 1,357.7 feet; depth to water, 21.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, brown	2	2
Silt, very sandy, tan	2	4
Sand, fine to medium	5	9
Silt	3	12
Sand, fine to coarse	2	14
Silt, clayey, gray	8	22
Sand, fine to medium, silty, some gravel	2	24
Sand, fine to medium, and fine to medium gravel, gray	21	45

25-1W-26ccd.--*Driller's log of test hole in SE SW SW sec. 26, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,353(T) feet; depth to water, 14.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	3	3
Sand, fine	7	10
Clay, gray	7	17
Sand and gravel	47	64
Clay, gray	2	66
Clay	16	82
Sand, fine to medium	12	94
Clay, brown	2	96
Sand, fine to medium	8	104
Clay and sand, brown	2	106
Sand, fine to medium	8	114
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, clayey, green	1	115
Shale, blue	10	125

25-1W-27ccc.--*Driller's log of test hole in SW SW SW sec. 27, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,353 feet; depth to water, 10.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	8	8
Sand, fine to medium	7	15
Sand and gravel, medium to coarse	28	43

	Thickness, feet	*Depth, feet*
Sand and gravel, medium to coarse, with some clay streaks	8	51
Sand and gravel, medium to coarse	10	61
Clay, sandy, brown	3	64
Sand, fine	55	119
Clay, sandy, brown	3	122
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	8	130

25-1W-27daa.--*Driller's log of test hole in NE NE SE sec. 27, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,356.1 feet; depth to water, 17.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray	2	2
Silt, sandy, tan	4	6
Sand, fine to medium	6	12
Silt, brown	2	14
Silt, dark-gray	3	17
Sand, fine to coarse, and fine gravel, silty, gray	7	24
Sand, fine to coarse, and fine to coarse gravel, pink; arkosic	25	49

25-1W-27ddd.--*Sample log of test hole in SE SE SE sec. 27, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,357.6 feet; depth to water, 16.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse, very silty, tan	2	4
Sand, fine to coarse, and fine to medium gravel; arkosic	15	19
Silt, sandy, dark grayish-brown; some fine to medium gravel and caliche	5	24
Sand, fine to coarse, and fine to medium gravel, silty; arkosic, much quartz	15	39

25-1W-28ada.--*Driller's log of test hole in NE SE NE sec. 28, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,362(T) feet; depth to water, 15.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, medium and coarse, and gravel	13	16
Clay, gray	3	19
Sand, medium and coarse, and gravel	26	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine and medium	18	63
Sand, medium and coarse, and gravel	4	67
Sand, fine and medium; some clay balls	19	86
Clay, sandy, brown; layer of fine sand	6	92
Sand, fine and medium; thin layers of clay	8	100
Sand, fine and medium	17	117
Gravel, limestone	1	118
Clay, shaly, green	4	122
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	-	122

25-1W-28cdd.--*Sample log of test hole in SE SE SW sec. 28, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,357 feet; depth to water, 12.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	4	4
Sand, medium to coarse; gravel in lower 10 feet	31	35
Clay, brown	2	37
Sand, medium to coarse, and gravel; abundant clay in lower 8 feet	16	53
Sand, fine to coarse, and gravel	7	60
Sand, fine to medium	27	87
Clay, brown	2	89
Sand, fine to medium	14	103
Clay, sandy, brown	9	112
Sand, fine to medium	7	119
Clay, sandy, gray	3	122
Sand, fine; layer of clay	6	128
Sand, fine to coarse	6	134

	Thickness, feet	*Depth, feet*
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale.....	6	140

25-1W-32ccc.--*Sample log of test hole in SW SW SW sec. 32, T 25 S, R 1 W, in road, 200 feet northwest of curve, 15 feet from fence; drilled September 1958. Altitude of land surface, 1,362.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, grayish-brown; contains caliche.....	5	5
Sand, fine to coarse, and fine to coarse gravel; arkosic; streaks of grayish-tan silt in lower 5 feet.....	15	20
Sand, fine to coarse, and fine to medium gravel; arkosic; some coarse gravel in lower 10 feet.....	15	35
Sand, fine to coarse, and fine to medium gravel; some tan silt and lower 15 feet has streaks of tan clay.....	20	55
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, silty, gray to tan.....	2	57
Sand, fine to coarse, and fine gravel.....	2	59
Clay, silty, gray and tan.....	3	62
Sand, fine to coarse, and fine gravel; quartzose and arkosic, some clay streaks.	3	65
Sand, fine to coarse, and fine gravel; 90 percent quartz, streaks of gray clay.....	10	75
Sand, fine to coarse, and fine gravel, clayey, silty, gray to tan.....	5	80
Sand, fine to coarse and some fine gravel; streaks of grayish-tan, clayey silt; lower 5 feet has very little gravel.....	10	90
Silt, clayey, gray to tan; streaks of sand and gravel; some arkosic.....	10	100
Silt, tan; arkosic sand streaks and caliche pebbles.....	10	110
Sand, fine to coarse, and fine gravel; many streaks of tan silt and gray clay.....	5	115
Sand, fine to coarse, and fine gravel, slightly silty; 95 percent quartz.....	5	120
Sand, fine to coarse, and fine gravel; streaks of grayish-tan clayey silt.....	10	130

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine gravel; 95 percent quartz, some tan clayey silt.....	5	135
Sand, fine to coarse, and fine gravel; quartzose.....	15	150
Sand, fine to coarse, and fine gravel; quartzose, thin streaks of gray clay.....	10	160
Silt, contains sand and fine to medium gravel; some dark gravel present.....	8	168
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	170

25-1W-34daa.--*Driller's log of test hole in NE NE SE sec. 34, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,352.3 feet; depth to water, 14.5 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray.....	2	2
Silt, tan.....	2	4
Sand, fine to coarse, some gravel; arkosic..	10	14
Sand, fine to coarse, and fine to coarse gravel, pink; arkosic.....	31	45

25-1W-34ddd.--*Sample log of test hole in SE SE SE sec. 34, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,350.95 feet; depth to water, 11.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray.....	3	3
Silt, sandy, tan.....	1	4
Sand, fine to coarse.....	5	9
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	35	44

25-1W-35cbb.--*Driller's log of test hole in NW NW SW sec. 35, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,351 feet; depth to water, 12.3 feet.*

	Thickness, feet	*Depth, feet*
Soil	1	1
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, grayish-brown	5	6
Sand, fine to medium	4	10
Sand, medium to coarse; some gravel	53	63
Sand, medium, and clay	22	85
Sand, fine to medium; clay balls	28	113
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	7	120

25-1W-35daa.--*Driller's log of test hole in NE NE SE sec. 35, T 25 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., July 1959. Altitude of land surface, 1,342 feet; depth to water 13.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown; sandy in lower 4 feet	10	12
Sand, fine to medium	3	15
Sand, medium to coarse, and gravel; some clay in lower 15 feet	43	58
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue and gray	12	70

25-1W-35dcc.--*Sample log of test hole in SW SW SE sec. 35, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,347.0 feet; depth to water, 10.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray	2	2
Silt, sandy, tan	1	3
Sand, fine to coarse, and some fine to medium gravel; arkosic	20	23
Silt, clayey, gray	2	25
Sand, fine to coarse, and fine to coarse gravel, silty; arkosic, much quartz	19	44

25-1W-35ddd.--*Driller's log of test hole in SE SE SE sec. 35, T 25 S, R 1 W; augered May 1955. Altitude of land surface, 1,345.5 feet; depth to water, 14.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, tan	2	2
Sand, fine to medium	2	4
Silt, brown; contains caliche	2	6
Silt, sandy, dark-gray	2	8
Sand, fine to medium	5	13
Sand, fine to coarse, and fine to coarse gravel, pink; arkosic	36	49

25-2W-2aaa.--*Driller's log of test hole in NE NE NE sec. 2, T 25 S, R 2 W, (Williams and Lohman, 1949, p. 425) drilled by the City of Wichita, 1938. Altitude of land surface, 1,389 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Pleistocene Series, undifferentiated		
Sand, coarse	15	20
Sand and clay	15	35
Sand, fine	5	40
Gravel	10	50
Clay, and gravel	15	65
Gravel	20	85
Sand, coarse	5	90
Clay and gravel	10	100
Clay	60	160
Sand and clay	25	185
Sand, fine	10	195
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	4	199

25-2W-2bbb.--*Sample log of test hole in NW NW NW sec. 2, T 25 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface, 1,393.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, light-gray to tan	17	17

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine to coarse gravel, grayish-pink; arkosic, streaks of grayish-tan sandy silt in lower 5 feet	11	28
Sand, fine to coarse, and fine to coarse gravel, grayish-pink; arkosic, streaks of gray to grayish-brown sandy silt in lower 5 feet	22	50
Sand, fine to coarse, and fine gravel, grayish-pink; arkosic, much quartz	5	55
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel, gray; quartzose	5	60
Sand, fine to coarse, tannish-gray; quartzose, some arkosic; with streaks of grayish-tan sandy silt in lower 10 feet	30	90
Sand, fine to coarse, silty, tannish-gray; contains caliche and snails	10	100
Silt, very sandy, tan to light-gray; caliche in lower 15 feet	20	120
Silt, light-gray; streaks of fine to coarse sand; arkose, snails present	10	130
Silt, light-gray; streaks of fine to coarse sand, quartzose	3	133
Sand, fine to coarse; quartzose; many streaks of gray sandy silt; some snails	10	143
Sand, fine to coarse, gray; quartzose, caliche pebbles in lower 10 feet	17	160
Sand, fine to coarse; gray, sandy silt streaks and caliche pebbles; snails in lower 20 feet, vertebrate fragments in lower 10 feet	35	195
Silt, very sandy, gray to grayish-tan	5	200
Sand, fine to coarse; quartzose, with caliche pebbles	15	215
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	5	220

25-2W-3add.--*Driller's log of test hole in SE SE NE sec. 3, T 25 S, R 2 W; augered by the City of Wichita, July 1954. Altitude of land surface, 1,393.9 feet; depth to water, 24.0 feet.*

	Thickness, feet	*Depth, feet*
Topsoil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		

	Thickness, feet	*Depth, feet*
Silt and fine sand, tan	1	2
Sand, fine to medium, silty	5	7
Sand, fine to coarse, tan; clean	3	10
Sand, fine to coarse, fine to medium gravel	5	15
Sand, fine to medium, tan; fine gravel in lower 10 feet, clean	15	30
Sand, medium to coarse, and fine to coarse gravel; clean	15	45
Silt, clayey, dark bluish-gray; tough	4	49
Sand, fine to coarse, tan	11	60

25-2W-3ccc.--*Driller's log of test hole in SW SW SW sec. 3, T 25 S, R 2 W; augered by the City of Wichita, July 1954. Altitude of land surface, 1,395.9 feet.*

	Thickness, feet	*Depth, feet*
Topsoil, sandy, brown	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, and fine sand, light-brown	5	6
Sand, fine, tan	2	8
Sand, fine to medium, tan; coarser sand in lower 3 feet	6	14
Sand, fine to coarse, and fine to medium gravel	38	52
Clay, light-gray; soft	3	55

25-2W-3ddd.--*Driller's log of test hole in SE SE SE sec. 3, T 25 S, R 2 W, 700 feet northwest of City well no. 29; augered by the City of Wichita.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to medium, brown	2	2
Sand, silty, tannish-brown	8	10
Sand, fine to medium, tan; clean	6	16
Sand, fine to medium, silty, brown	1	17
Sand, fine to medium, gray	10	27
Sand, fine to coarse, grayish-tan; clean	10	37
Sand, fine to coarse, and fine gravel, grayish-tan; clean	8	45
Clay, yellowish-brown; tough	5	50

25-2W-4ccc.--*Sample log of test hole in SW SW SW sec. 4, T 25 S, R 2 W; drilled by the City of Wichita, February 1958. Altitude of land surface, 1,400.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-brown	2	2
Sand, fine to coarse	2	4
Silt, sandy, clayey, grayish-tan	2	6
Sand, fine to coarse and fine to coarse gravel; arkosic with some dark gravel	9	15
Silt, dark-gray; streak of sand and gravel from 16 to 17 feet	3	18
Sand, fine to coarse, and fine to coarse gravel; arkosic	31	49
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan to gray	6	55
Sand	2	57
Silt, sandy, tan	19	76
Silt, sandy, grayish-tan; much caliche	6	82
Sand, fine to coarse, and fine gravel; arkosic	9	91
Silt	1	92
Sand, fine to coarse, and fine gravel; arkosic	4	96
Silt, sandy, tan	4	100
Sand, fine to coarse	1	101
Silt, sandy, tan	2	103
Sand, fine to coarse	2	105
Silt, very sandy, light-gray	5	110
Sand, fine to coarse	2	112
Silt, sandy, pinkish-tan	6	118
Sand	2	120
Silt, sandy, pinkish-tan	3	123
Sand, fine to coarse, and fine gravel; arkosic	19	142
Silt, sandy, clayey, tan; sand streaks at 144, 150, and 155 feet	15	157
Sand, fine to coarse; quartzose	6	163
Silt, sandy; light-gray sand, sand streaks at 164 and 169 feet	17	180
Silt, sandy, yellowish-tan	10	190
Silt, sandy, light-tan; carbonaceous specks	13	203
Sand, fine to coarse, and fine gravel; quartzose, many streaks of tan silt	11	214
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray	4	218

25-2W-5bbb.--*Sample log of test hole 51T in NW NW NW sec. 5, T 25 S, R 2 W, 240 feet west of City well M51; drilled by Layne-Western Co. for the City of Wichita, January 1958. Altitude of land surface, 1,409.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, tan	4	4
Sand, fine to coarse, and fine to medium gravel; arkosic	8	12
Silt, sandy, gray	2	14
Sand, fine to coarse, and fine to coarse gravel, pinkish-gray; arkosic, very weathered	36	50
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, very sandy, clayey, reddish-tan; some caliche in lower 10 feet	30	80
Sand, fine to coarse, and fine gravel, tan; arkosic; few streaks of sandy tan silt in lower 15 feet	25	105
Sand, fine to coarse, and fine gravel, tan; arkosic	5	110
Silt, sandy gray to tan; carbonaceous specks in the gray silt	5	115
Silt, very sandy, tan; some caliche; clayey in lower 10 feet	15	130
Silt, very sandy, tan; clayey with a few sand streaks in lower 10 feet	20	150
Sand, fine to coarse; quartzose with many silt streaks	5	155
Sand, fine to coarse, and fine gravel, yellowish-gray; predominantly quartz, gravel is of the Dakota type; silt streaks with carbonaceous specks	30	185
Silt, sandy, very calcareous, light-gray; sand streaks in lower 5 feet	10	195
Sand, fine to coarse, silty, yellowish-gray; Dakota type	7	202
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	4	206

25-2W-5bcc.--*Sample log of test hole 52T in SW SW NW sec. 5, T 25 S, R 2 W, 240 feet southwest of City well M52; drilled by Layne-Western Co. for the City of Wichita, January 1958. Altitude of land surface, 1,407.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray to tan.....	4	4
Sand, fine to coarse, and fine to medium gravel; arkosic; coarse gravel in lower 25 feet.....	36	40
Sand, fine to coarse, and fine to medium gravel; arkosic; some sandy tan silt.....	15	55
Pliocene(?) and Pleistocene Series, undifferentiated		
Silt, very sandy, tan.....	13	68
Sand, fine to medium.....	2	70
Silt, very sandy, tan.....	10	80
Silt, sandy, grayish-tan; some caliche.....	5	85
Sand, fine to coarse; predominantly quartz..	3	88
Silt, sandy, tan.....	4	92
Sand, fine to coarse, and fine gravel; predominantly quartz with some arkose.....	7	99
Silt, very sandy, grayish-tan.....	6	105
Sand, fine to coarse, tan; arkosic.....	14	119
Silt, very sandy, grayish-tan to tan.....	10	129
Sand, fine to medium; predominantly quartz.....	6	135
Silt, very sandy, some gravel, grayish-tan.	20	155
Silt, sandy, gray to tan; includes many fragments of Wellington shale.....	5	160
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale.....	25	185

25-2W-5ccd.--*Sample log of test hole 53T in SE SW SW sec. 5, T 25 S, R 2 W, 240 feet southwest of City well no. M53; drilled by Layne-Western Co. for the City of Wichita, January 1958. Altitude of land surface, 1,405.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan.....	5	5
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	35	40
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan; some sand streaks.....	5	45

	Thickness, feet	*Depth, feet*
Silt, sandy, clayey, tan to grayish-tan; very sandy at base	10	55
Sand, fine to coarse, and fine to medium gravel; arkosic with streaks of tan sandy silt	17	72
Silt, sandy, tan	5	77
Sand, fine to medium, grayish-tan; predominantly quartz, some arkosic	13	90
Silt, sandy, to clayey, tan to dark-tan; contains carbonaceous material in lower 15 feet	30	120
Silt, sandy, tan to reddish-brown; contains fragments of Permian red beds	5	125
Silt, tan, reddish-brown and grayish-green; contains Permian rubble	5	130
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray to grayish-green, hard; with thin beds of hard limestone	20	150

25-2W-5dbb.--*Sample log of City well M54 in NW NW SE sec. 5, T 25 S, R 2 W, drilled by Layne-Western Co. for the City of Wichita, February 1958. Altitude of land surface, 1,404.8 feet; depth to water, 7.7 feet.*

	Thickness, feet	*Depth, feet*
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-tan; some caliche	4	5
Sand, fine to coarse, and fine to medium gravel; arkosic; coarser gravel in lower 40 feet	45	50
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan; some caliche; clayey in lower 5 feet	10	60
Silt, sandy, grayish-tan; contains some caliche pebbles	5	65
Sand, fine to coarse, and fine gravel; arkosic; few grayish-tan silt streaks	5	70
Sand, fine to coarse, and fine to coarse gravel; arkosic; finer gravel in lower 10 feet, grayish-tan silty clay at base	15	85

25-2W-6ddd.--*Sample log of test hole 3T in SE SE SE sec. 6, T 25 S, R 2 W; drilled by the City of Wichita, January 1956. Altitude of land surface, 1,405(T) feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tan	4	6
Sand, fine to coarse, and fine to coarse gravel; arkosic	47	53
Pliocene(?) Series and Lower Pleistocene Sub-Series, undifferentiated		
Silt, very sandy, tan	3	56
Sand, fine	2	58
Silt, sandy, grayish-tan to tan	9	67
Sand, fine	2	69
Silt, sandy, light-gray to tan; some caliche	7	76
Sand, fine; some silt	5	81
Silt, very sandy, grayish-tan; some caliche and specks of carbon	15	96
Silt and sand streaks	2	98
Sand, fine to medium, tan; arkosic	14	112
Silt, very sandy, tan	21	133
Silt, sandy, tannish-gray; much red and gray shale fragments and caliche pebbles	10	143
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray to dark-gray; some thin limestone streaks	15	158

25-2W-9aaa.--*Sample log of test hole in NE NE NE sec. 9, T 25 S, R 2 W; drilled by the City of Wichita, 1938. Altitude of land surface, 1,395.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, brown to tan; contains caliche	4	4
Sand, fine to coarse, and fine to coarse gravel; arkosic; sandy gray silt streak at 26 to 27 feet	27	31

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine to coarse gravel; arkosic; streaks of sandy tan silt and clay in lower 3 feet.....	11	42
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to medium; predominantly quartz, many tan sandy silt streaks.....	12	54
Sand, fine to coarse, and fine to medium gravel; arkosic.....	6	60
Silt, sandy, tan.....	1	61
Sand, fine to coarse, and fine to medium gravel; arkosic; streaks of sandy, clayey tan silt.....	12	73
Silt, clayey, sandy, light tannish-gray; calcareous; thin streaks of sand and fine gravel.....	40	113
Silt, very sandy, light-tan; calcareous.....	8	121
Sand, fine to coarse, silty; quartz.....	4	125
Sand, fine to coarse, and fine gravel, tannish-gray; quartzose.....	6	131
Sand, fine to coarse; quartz; streaks of grayish-tan silt with caliche.....	7	138
Sand, fine to coarse; quartzose.....	3	141
Silt, sandy, tan.....	2	143
Sand, fine to coarse, gray; quartzose; with streaks of tannish-gray clay with caliche.....	11	154
Sand, fine to coarse, and fine gravel; quartzose.....	5	159
Silt, very sandy, light grayish-tan; some caliche.....	8	167
Sand, fine to coarse, and fine to medium gravel; quartzose; abundant shale fragments and tan silt, clay with caliche pebbles.....	13	180
Silt, sandy, light grayish-tan; calcareous with some caliche.....	17	197
Sand, fine to coarse, and fine to medium gravel; quartzose, some silt, caliche, and shale fragments in lower 4 feet.....	16	213
Sand, fine to coarse, and fine gravel, very silty; quartzose, and some caliche.....	10	223
Sand, fine to coarse, and fine to coarse gravel; quartzose, abundant caliche pebbles and shale fragments.....	5	228
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	7	235

25-2W-11baa.--*Sample log of test hole 30T in NE NE NW sec. 11, T 25 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface, 1,389.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, dark-gray	3	3
Sand, fine to coarse, and fine to medium gravel; arkosic, streaks of sandy tan to gray silt; coarser gravel in lower 10 feet	22	25
Sand, fine to coarse, and fine to coarse gravel; arkosic	20	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse and fine gravel; arkosic; many clayey, sandy, gray to grayish-tan silt streaks and some caliche and quartz in lower 10 feet	25	70
Sand, fine to coarse, and fine to coarse gravel; arkosic	10	80
Sand, fine to coarse; quartzose with streaks of sandy, clayey, medium-gray to tan silt; caliche pebbles in lower 25 feet	35	115
Silt, very sandy, light-gray to tannish-gray; some caliche pebbles; snail fragments in lower 27 feet	42	157
Sand, fine to medium; quartzose, much arkose	5	162
Silt, very sandy, tannish-gray; many sand streaks	8	170
Sand, fine to coarse; predominantly quartz, some arkose; some fine gravel 178 to 185 feet and 200 to 227 feet; grayish-tan silt streaks scattered throughout with some caliche pebbles in lower 17 feet	57	227
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	3	230

25-2W-11bbb.--*Sample log of test hole 29T in NW NW NW sec. 11, T 25 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface, 1,392.7 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, light-gray to tan; some caliche	20	20
Sand, fine to coarse, and fine to coarse gravel; arkosic; some sandy, clayey, grayish-tan silt	20	40
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, very clayey, light-gray to grayish-tan; some caliche	6	46
Sand, fine to coarse, and fine gravel; arkosic, much quartz; thin streaks of silty tan clay in lower 10 feet	14	60
Sand, fine to coarse, and fine to medium gravel; arkosic, abundant quartz, coarser gravel in lower 5 feet	10	70
Sand, fine to coarse, and fine to medium gravel; arkosic with streaks of tan sandy silt	5	75
Silt, sandy, clayey, tan to dark-gray; snails and caliche present in lower 10 feet	15	90
Sand, fine to coarse, gray; quartzose, some caliche pebbles and gray to grayish-tan silt streaks	30	120
Silt, clayey, very sandy, light-gray to grayish-tan; abundant caliche; lower 5 feet darker gray	25	145
Sand, fine to coarse; quartzose with abundant arkose, clayey, gray silt streaks	10	155
Sand, fine to medium; quartzose with abundant arkose, some sandy grayish-tan silt; coarser sand in lower 10 feet	20	175
Sand, fine to coarse, gray; quartzose, contains some very sandy grayish-tan silt and caliche; lower 20 feet has gray shale fragments	50	225
Silt, sandy, gray; contains caliche pebbles and shale fragments, streaks of fine to coarse gray sand	7	232
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	8	240

25-2W-12baa.--*Sample log of test hole 32T in NE NE NW sec. 12, T 25 S, R 2 W, drilled by Layne-Western Co. for the City of Wichita, 1947. Altitude of land surface 1,385.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-tan to dark-gray; some caliche and carbonaceous specks.....	15	15
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	20	35
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine to coarse gravel; predominantly quartz.....	35	70
Sand, fine to coarse, predominantly quartz..	10	80
Silt, sandy, grayish-tan; abundant sand streaks and caliche pebbles.....	15	95
Sand, fine to coarse, and fine gravel; quartzose with some arkose; tan and gray silt streaks and caliche in lower 5 feet.	15	110
Sand, fine to coarse, and fine gravel; predominantly quartz with some clayey, sandy tan silt.....	10	120
Sand, fine to coarse, and fine gravel; predominantly quartz with some arkose, with clayey, sandy, grayish-tan silt in lower 5 feet.....	15	135
Silt, clayey, very sandy, grayish-tan; some caliche.....	12	147
Sand, fine to coarse; predominantly quartz, streaks of sandy tan to grayish-tan silt; some fine gravel in the lower 20 feet.....	28	175
Sand, fine to coarse, and fine gravel; predominantly quartz; some silt streaks in lower 5 feet.....	10	185
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	5	190

25-2W-12bbb.--*Sample log of test hole 31T in NW NW NW sec. 12, T 25 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita. Altitude of land surface, 1,388 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, gray to tan; some caliche.....	8	8
Sand, fine to coarse, and fine gravel; arkosic.....	2	10

	Thickness, feet	*Depth, feet*
Silt, sandy, medium-gray.....	6	16
Sand, fine to coarse, and fine gravel; grayish-pink; arkosic, much sandy, gray silt in upper 5 feet and lower 5 feet; abundant gray feldspar in lower 40 feet..	44	60
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; predominantly quartz, some arkose.....	10	70
Sand, fine to coarse, and fine to medium gravel; abundant white and gray feldspar, arkosic.....	10	80
Sand, fine to coarse, gray; quartzose; some fine gravel, caliche and gray silt streaks in lower 10 feet.....	20	100
Sand, fine to coarse, and fine gravel; quartzose, with caliche and streaks of sandy gray silt.....	10	110
Sand, fine to coarse, predominantly fine to medium; quartz; some silt with caliche...	15	125
Sand, fine to coarse, and fine gravel; quartzose with some arkose, much sandy gray to grayish-tan silt; no gravel in lower 25 feet.....	45	170
Sand, fine to coarse, and fine gravel, grayish-pink; predominantly quartz with much arkosic material; streaks of sandy grayish-brown silt in lower 5 feet.....	15	185
Sand, fine to coarse; quartzose, very little arkose.....	10	195
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	5	200

25-2W-16bbb.--*Sample log of test hole in NW NW NW sec. 16, T 25 S, R 2 W; drilled for the City of Wichita, 1938. Altitude of land surface, 1,397.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown to dark-tan.....	4	4
Sand, fine to coarse, and fine to coarse gravel; arkosic, much black-stained gravel in lower 16 feet.....	25	29
Sand, fine to coarse, and fine to medium gravel; silty clay streaks in upper 2 feet with arkose in lower 5 feet.....	7	36

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine to medium gravel; arkosic with a few streaks of silty tan clay	18	54
Sand, fine to coarse, and fine to coarse gravel; arkosic with tan sandy silt streaks near base	5	59
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, very sandy, light-tan	8	67
Sand, fine to medium; quartz, much sandy tan silt; some caliche near base	23	90
Sand, fine to coarse, and fine to medium gravel; arkosic, much sandy tan silt	12	102
Sand, fine to medium, some coarse; much sandy tan silt	9	111
Silt, very sandy, light grayish-tan; some caliche at 128 feet and at base	50	161
Silt, very sandy, tan; some caliche nodules	7	168
Silt, sandy, grayish-tan; many caliche nodules and fragments of gray and green shale	26	194
Sand, fine to medium; much sandy grayish-tan silt	7	201
Silt, clayey, sandy, light-gray; caliche pebbles and shale fragments	2	203
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray; some thin limestone beds	7	210

25-2W-16ccc.--*Sample log of test hole in SW SW SW sec. 16, T 25 S, R 2 W; drilled for the City of Wichita, 1938. Altitude of land surface, 1,391.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown to tan	6	6
Sand, fine to coarse, and fine to coarse gravel; arkosic, no coarse gravel in lower 14 to 24 feet	29	35
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan to light grayish-tan	11	46
Silt, very sandy, tan to light-gray	14	60
Sand, fine to medium; quartzose, much light-gray silt	10	70

	Thickness, feet	Depth, feet
Sand, fine to medium; predominantly quartz, some arkosic; much sandy grayish-tan silt	7	77
Silt, light-tan; contains much fine to medium sand	17	94
Sand, fine to medium; quartzose, some sandy, light grayish-tan silt	10	104
Silt, very sandy, light-tan to tan	12	116
Sand, fine to medium, much tan sandy silt	14	130
Silt, very sandy, tan; much fine to medium sand and carbonaceous material; clayey, with caliche in lower 5 feet	14	144
Silt, sandy, clayey, light-gray to grayish-tan; calcareous	8	152
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray	-	152

25-2W-24ccc.--*Driller's log of test hole in SW SW SW sec. 24, T 25 S, R 2 W (Williams and Lohman, 1949, p. 430); drilled 1941. Altitude of land surface, 1,378 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Silt	12	12
Sand and gravel	16	28
Silt and clay	5	33
Sand	27	60
Silt and clay	5	65
Sand	5	70
Silt and clay	2	72
Sand and gravel	93	165
Silt and clay	7	172
Sand	28	200
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	201

25-2W-29bbb.--*Sample log of test hole in NW cor. sec. 29, T 25 S, R 2 W (Williams and Lohman, 1949, p. 431); drilled 1939. Altitude of land surface, 1,393.4 feet.*

	Thickness, feet	Depth, feet
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		

	Thickness, feet	*Depth, feet*
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt and clay, brown, sandy.....	4	7
Gravel, coarse; contains clay balls.....	38	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt and clay, tan; contains sand.....	25	70
Gravel, coarse.....	53	123
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	7	130

25-2W-31bbb.--*Sample log of test hole in NW NW NW sec. 31, T 25 S, R 2 W; drilled 1939. Altitude of land surface, 1,417.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, tan to brown, some light grayish-tan in lower 11 feet.....	36	36
Sand, fine to coarse, and fine to medium gravel, grayish-pink; arkosic, with abundant quartz; coarse gravel 51 to 60 feet, finer gravel 60 to 69 feet; some clayey, gray to tan silt from 45 to 51 feet.....	33	69
Sand, fine to coarse, and fine to coarse gravel, grayish-pink; arkosic; fine gravel in lower 5 feet.....	16	85
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, clayey, grayish-tan.....	1	86
Sand, fine to coarse, and fine to medium gravel, grayish-pink; arkosic; coarse gravel 90 to 100 feet and 104 to 118 feet; fine gravel with streaks of sandy gray silt 100 to 104 feet.....	32	118
Sand, fine to coarse; arkosic, with sandy gray to tan silt; fine to medium gravel in lower 10 feet.....	12	130
Silt, sandy, light tannish-gray.....	5	135
Sand, fine to coarse, and fine gravel; arkosic.....	10	145
Silt, sandy, tan.....	5	150
Sand, fine to coarse, and fine gravel; arkosic.....	15	165

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine to coarse gravel; arkosic; no coarse gravel in lower 7 feet, streaks of clayey tan silt with caliche in lower 2 feet.....	12	177
Sand, fine to coarse, and fine to medium gravel; arkosic, much sandy tan silt, fine gravel, and less silt in lower 8 feet.....	16	193
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	8	201
Sand, fine to coarse, some fine gravel; arkosic with abundant quartz.....	10	211
Sand, fine to coarse, and fine to medium gravel; arkosic with abundant quartz; some pebbles of shale and limestone.....	11	222
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	8	230

25-2W-35bcd.--*Sample log of Bentley reserve well no. 1 in SE SW NW sec. 35 T 25 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita, 1956. Altitude of land surface, 1,374.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, gray.....	5	5
Sand, fine.....	5	10
Sand, fine to coarse, and fine to coarse gravel; arkosic; fine gravel in lower 10 feet.....	40	50
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, fine to coarse gravel, grayish-pink; streaks of sandy tan silt..	5	55
Sand, fine to coarse, and fine to medium gravel; arkosic, less gravel in lower 5 feet.....	10	65
Sand, fine to coarse, to very sandy tan to reddish-tan silt.....	15	80
Silt, sandy, tan; to fine to coarse sand and fine to medium gravel; arkosic.....	10	90
Sand, fine to coarse, and fine gravel; arkosic; fine to coarse gravel in lower 5 feet with some material derived from the Dakota Formation.....	15	105
Sand, fine to coarse, fine to medium gravel; arkosic, with streaks of clayey tan silt.....	15	120

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine gravel; arkosic, fine to coarse gravel in lower 10 feet	15	135
Sand, fine to coarse, to silt, clayey, sandy tan	5	140
Silt, clayey, sandy, to fine to coarse sand; arkosic	5	145
Silt, clayey, sandy, tan to grayish-tan; contains caliche and carbonaceous specks	20	165
Sand, fine; arkosic, much clayey tan silt	5	170
Silt, clayey, sandy, grayish-tan; much caliche	5	175
Silt, clayey, light-gray; many snail fragments in upper 5 feet	10	185
Sand, fine to coarse, fine to medium gravel, gray; limestone pebbles, chert, and sandy gray silt and clay streaks	35	220
Silt, sandy, gray; caliche and shale fragments in lower part	2	222
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, dark-gray	-	222

25-3W-7bbb.--*Sample log of test hole in NW NW NW sec. 7, T 25 S, R 3 W (Williams and Lohman, 1949, p. 432); augered 1939. Altitude of land surface, 1,433.2 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Pleistocene Series, undifferentiated		
Clay and silt, reddish-brown	2	6
Sand and gravel	3	9
Sand	24	33
Sand, contains clay balls	2	35
Sand and gravel	12	47
Gravel	4	51
Sand, coarse; interbedded with coarse gravel	129	180
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	20	200

25-3W-29cbb.--*Sample log of test hole in NW NW SW sec. 29, T 25 S, R 3 W, in ditch on east side of road, 20 feet south of field drive, 30 feet south of 1/2-sec. fence; augered August 1957. Altitude of land surface, 1,453.0 feet; depth to water, 38.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (terrace deposits and loess, undifferentiated)		
Silt, slightly sandy, dark-tan	5	5
Silt, grayish-tan	5	10
Silt, sandy, dark-tan to tan; with streaks of silty grayish-tan clay	35	45
Silt, tan; much fine sand; with fine to coarse silty sand at base	10	55
Sand, fine to coarse, and fine to medium gravel; arkosic	16	71
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	-	71

26-1E-3ccc.--*Sample log of test hole in SW SW SW sec. 3, T 26 S, R 1 E, on road at northeast corner of intersection, 40 feet south of bridge; augered September 1958. Altitude of land surface, 1,352.5 feet; depth to water, 18.0± feet.*

	Thickness, feet	*Depth, feet*
Road fill	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark-gray	1	5
Silt, tan	5	10
Silt, dark grayish-tan	5	15
Silt, sandy, grayish-brown	5	20
Silt, sandy, light grayish-tan	5	25
Silt, sandy	12	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	38

26-1E-8bbb.--*Sample log of test hole in NW NW NW sec. 8, T 26 S, R 1 E, on south road shoulder, 100 feet east of north-south road; augered September 1958. Altitude of land surface, 1,339.5 feet; depth to water, 13.3 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark grayish-tan	3	5
Silt, sandy, tan	8	13
Sand, fine to coarse, very silty	2	15
Silt, light grayish-tan; very sandy at base	5	20
Sand, fine to coarse, and fine gravel, very silty, tan; arkosic, sand in lower 15 feet is quartz; streak of gray silt at 47 to 48 feet	30	50
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	51

26-1E-9abb.--*Sample log of test hole in NW NW NE sec. 9, T 26 S, R 1 E, on south side of road, 150 feet east of 1/2-sec. fence; augered September 1958. Altitude of land surface, 1,359.0 feet; depth to water, 23.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, very sandy, dark-tan	22	22
Sand, fine to coarse, very silty; quartzose	3	25
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	2	27

26-1E-19ccc.--*Sample log of test hole in SW SW SW sec. 19, T 26 S, R 1 E, in private drive on north side of road, 75 feet east of highway 96; augered July 1957. Altitude of land surface, 1,327.5 feet; depth to water, 7.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, brown	5	5
Sand, fine to medium, silty	5	10
Sand, fine to coarse, silty	5	15

26-1E-29bbb.--*Sample log of test hole in NW cor. sec. 29, T 26 S, R 1 E (Williams and Lohman, 1949, p. 434); drilled by Layne-Western Co. for the Kansas Gas and Electric Co., 1937. Altitude of land surface, 1,320(T) feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy	4	4
Sand, coarse, and fine gravel	11	15
Sand, medium to coarse, and fine gravel	5	20
Sand, medium to coarse	5	25
Gravel, fine, and coarse sand	10	35
Gravel, fine to medium, and coarse sand	11	46
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	4	50
Shale, hard, blue	7	57
Gypsum	1	58
Shale, hard, blue; contains gypsum	8	66
Shale, hard, blue	3	69
Shale and gypsum	11	80

26-1W-1bad.--*Sample log of test hole in SE NE NW sec. 1, T 26 S, R 1 W, on west side of road, 15 feet north of property gate; augered by the City of Wichita, July 1958. Altitude of land surface 1,340(T) feet; depth to water, 17.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine, very silty, tan	3	4
Silt, dark-tan	6	10
Sand, fine to medium, and fine to medium gravel, very silty; arkosic; predominantly fine gravel in lower 10 feet	19	29
Sand, fine to coarse, and fine to medium gravel, arkosic	13	42
Silt, sandy, tan	1	43
Sand, fine to coarse, and fine to medium gravel; arkosic	3	46
Silt, clayey, sandy, gray	3	49
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, hard	4	53

26-1W-2bab.--*Sample log of test hole in NW NE NW sec. 2, T 26 S, R 1 W, 0.25 mile east of north-south road; augered July 1957. Altitude of land surface, 1,351.1 feet; depth to water, 3.57 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown	5	5
Sand, fine, silty	10	15
Sand, fine to coarse; arkosic	5	20
Clay, blue	3	23
Sand, fine to coarse	7	30
Sand, fine to coarse, and fine gravel; arkosic; medium gravel in lower 34 feet	44	74
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray	1	75

26-1W-6bbb.--*Sample log of test hole in NW NW NW sec. 6, T 26 S, R 1 W; drilled by the Phillips Petroleum Co., 1940. Altitude of land surface, 1,365(T) feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse; arkosic; fine to medium gravel in lower 15 feet	40	40
Sand, fine to coarse, and fine to coarse gravel; arkosic	5	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, fine to coarse gravel; arkosic, with streaks of sandy tan to gray silt in upper 25 feet and lower 10 feet	45	90
Sand, fine to coarse, and fine gravel; streaks of sandy tan silt	10	100
Sand, fine to coarse; arkosic, much sandy tan silt with caliche	10	110
Sand, fine to coarse, and fine to medium gravel; arkosic, some tan silt; more silt and finer gravel in lower 10 feet	15	125
Silt, sandy, clayey, tan	5	130
Sand, fine to coarse, and fine gravel, silty; arkosic, with caliche	10	140
Sand, fine to coarse, predominantly quartz; some arkose, much sandy tan silt; some caliche pebbles in lower 15 feet	25	165

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine gravel; quartzose; some medium gravel in lower 5 feet	25	190
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	6	196

26-1W-6ccc.--*Sample log of test hole in SW SW SW sec. 6, T 26 S, R 1 W; drilled 1944. Altitude of land surface, 1,361 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark- to light-gray	2	2
Sand, fine to coarse, and fine to coarse, grayish-pink gravel; arkosic	43	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, gray to tan	3	48
Sand, fine to coarse, and fine gravel; arkosic; fine to medium gravel in lower 22 feet	44	92
Silt, clayey, sandy, gray to grayish-tan; tan in lower 20 feet	28	120
Sand, fine to coarse, and some fine gravel, gray; quartzose	8	128
Silt, sandy, tan; some caliche	4	132
Sand, fine to coarse, and some fine gravel, gray; quartzose	6	138
Silt, sandy, tannish-gray, and dark-gray to tan clay	9	147
Sand, fine to coarse, and fine gravel; predominantly quartz, much arkose with streaks of sandy, tannish-gray silt	33	180
Sand, fine to coarse, and fine gravel, gray; quartzose	8	188
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	-	188

26-1W-12abb.--*Driller's log of test hole in NW NW NE sec. 12, T 26 S, R 1 W; augered by the City of Wichita, July 1958. Altitude of land surface, 1,343 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, tan	5	7
Sand, fine, yellow to tan	2	9
Sand, fine to coarse, tan; some gravel	5	14
Sand to coarse gravel, brown	3	17
Clay, brown	2	19
Sand and gravel	3	22
Clay	1	23
Sand, fine to coarse, grayish-tan	11	34
Sand to fine gravel, grayish-black to white; quartz	17	51
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	-	51

26-1W-12acc.--*Driller's log of test hole in SW SW NE sec. 12, T 26 S, R 1 W; augered by the City of Wichita, July 1958. Altitude of land surface, 1,340 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, sandy, tan	2	4
Sand, fine, reddish-tan	2	6
Silt and clay, tan	1	7
Sand to fine gravel, orangish-tan	2	9
Sand to medium gravel	10	19
Sand to coarse gravel, tan	10	29
Sand to medium gravel, orangish-tan	23	52

26-1W-12dbb.--*Sample log of test hole in NW NW SE sec. 12, T 26 S, R 1 W; augered July 1957. Altitude of land surface, 1,339.4 feet; depth to water, 11.56 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown	5	5
Silt, sandy, brown	5	10
Sand, fine to coarse, and fine to coarse gravel	5	15
Sand, fine to coarse, and fine to medium gravel	41	56

	Thickness, feet	*Depth, feet*
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-green.....	1	57

26-1W-13aaa.--*Sample log of test hole in NE NE NE sec. 13, T 26 S, R 1 W; augered July 1957. Altitude of land surface, 1,337.1 feet; depth to water, 10.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown.....	6	6
Sand, fine, tan.....	6	12
Sand, fine to coarse; some gravel in upper 3 feet and lower 40 feet.....	53	65
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-green.....	1	66

26-1W-13bbb.--*Sample log of test hole in NW NW NW sec. 13, T 26 S, R 1 W; augered July 1957. Altitude of land surface, 1,337.3 feet; depth to water, 6.1 feet.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown.....	5	7
Sand, fine, silty.....	3	10
Sand, fine to coarse, and fine to medium gravel; arkosic.....	48	58
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-green.....	1	59

26-1W-20bbb.--*Driller's log of test hole in NW NW NW sec. 20, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,350.0 feet; depth to water, 6.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt.....	4	4

	Thickness, feet	*Depth, feet*
Clay, gray	5	9
Sand, medium to coarse, and gravel	6	15
Sand, fine to coarse, and gravel	17	32
Clay, brown	6	38
Sand, fine to coarse, and gravel; clay streaks	12	50
Clay, brown	25	75
Sand, fine to medium; clay streaks	15	90
Clay, brown	35	125
Sand, fine to medium; clay streaks	15	140
Sand, fine to coarse, and gravel; a few clay streaks	5	145
Clay, brown	2	147
Sand, fine to coarse	13	160
Clay, green	3	163
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	168

26-1W-20dcc.--*Driller's log of test hole in SW SW SE sec. 20, T 26 S, R 1 W; drilled by the City of Wichita, December 1954. Altitude of land surface, 1,348.0 feet; depth to water, 7.7 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown to gray	8	10
Sand, fine to coarse	11	21
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, yellow	2	23
Silt, black	2	25
Clay, dark-brown	3	28
Sand, fine to medium, and fine to coarse in lower part	33	61
Clay, gray to yellow	17	78
Sand, fine to coarse	20	98
Clay, yellow	2	100
Sand, fine to medium	3	103
Clay, yellow and gray	12	115
Sand, fine to medium	29	144
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	2	146

26-1W-24aaa.--*Sample log of test hole in NE NE NE sec. 24, T 26 S, R 1 W, in triangle formed by road junction, 60 feet south of east-west road; augered July 1957. Altitude of land surface, 1,332.9 feet; depth to water, 8.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown	7	7
Sand, fine to medium, silty	3	10
Sand, fine to coarse, and gravel	46	56
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	57

26-1W-26ada.--*Sample log of test hole in NE SE NE sec. 26, T 26 S, R 1 W, 0.75 mile north of east-west road; augered July 1957. Altitude of land surface, 1,329.5 feet; depth to water, 5.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, brown	6	6
Sand, fine, silty	4	10
Sand, fine to medium	10	20
Sand, fine to coarse, and fine to medium gravel	30	50
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray	1	51

26-1W-26bbb.--*Sample log of test hole in NW NW NW sec. 26, T 26 S, R 1 W, on east side of road, 0.1 mile south of east-west road; augered July 1957. Altitude of land surface, 1,336.1 feet; depth to water, 6.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, brown	3	5
Silt, gray	5	10
Sand, fine	5	15
Sand, fine to medium	2	17
Sand, fine to coarse, and gravel, arkosic	46	63

26-1W-27bbb.--*Sample log of test hole in NW NW NW sec. 27, T 26 S, R 1 W, on road shoulder on south side of road; augered July 1957. Altitude of land surface, 1,336.2 feet; depth to water, 3.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, gray	3	3
Sand, fine to medium	7	10
Sand, fine to coarse	5	15
Sand, fine to coarse, and gravel	5	20

26-1W-28bbb.--*Driller's log of test hole in NW NW NW sec. 28, T 26 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita, August 1955. Altitude of land surface, 1,339.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt	4	4
Clay, gray	6	10
Sand, fine to coarse	11	21
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, brown and blue	4	25
Sand, fine to coarse, and gravel; clay streaks	5	30
Sand, fine to coarse, and gravel; clay streaks in lower 10 feet	40	70
Clay, brown and gray; with sand streaks	5	75
Sand, fine to coarse, and some gravel; clay streaks	45	120
Clay, sandy, brown; some sand streaks; green clay in lower 2 feet	15	135
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	140

26-1W-28cdd.--*Driller's log of test hole in SE SE SW sec. 28, T 26 S, R 1 W; drilled by the City of Wichita, December 1954. Altitude of land surface, 1,335 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		

	Thickness, feet	*Depth, feet*
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, grayish-brown to gray	9	11
Sand, fine to coarse, some gravel; brown to reddish-brown	8	19
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay	5	24
Sand, fine to medium	7	31
Clay, sandy, gray	3	34
Sand, fine to coarse	24	58
Clay, yellow; streaks of fine sand	17	75
Sand, fine; yellow clay streaks in upper 10 feet; medium sand in lower 8 feet	23	98
Clay, yellow; with streaks of fine sand	17	115
Sand, fine to medium; with clay streaks	35	150
Clay, blue	4	154
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, clayey, blue	11	165

26-1W-30bbb.--*Driller's log of test hole in NW NW NW sec. 30, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,367.0 feet; depth to water, 21.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt	5	5
Clay, brown	13	18
Sand, fine to coarse, and gravel	25	43
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, brown and blue	5	48
Sand, fine to coarse, and gravel	17	65
Sand, medium to coarse, and gravel	5	70
Sand, fine to coarse, and fine to medium gravel	27	97
Clay, brown	2	99
Sand, fine to coarse, and some medium gravel	5	104
Clay, brown and blue; sand streaks in lower 6 feet	12	116
Sand, fine to medium; many clay streaks	4	120
Sand, medium to coarse, and gravel; a few clay streaks in lower 15 feet	20	140
Sand, fine to coarse, and gravel	18	158
Clay, brown	2	160

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and gravel.....	10	170
Clay, brown.....	3	173
Sand, fine to coarse, and gravel; clay streaks.....	17	190
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	195

26-1W-30ddd.--*Driller's log of test hole in SE SE SE sec. 30, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,354.3 feet; depth to water, 17.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay; sandy in lower 7 feet.....	19	19
Sand and gravel.....	11	30
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay.....	4	34
Sand, fine to coarse, and gravel; clay streaks in lower 12 feet.....	29	63
Clay.....	5	68
Sand, fine to coarse, and gravel; clay streaks in lower 10 feet.....	20	88
Clay.....	5	93
Sand, fine to coarse; clay streaks in upper 10 feet; fine to medium gravel from 103 to 139 feet.....	84	177
Clay, green.....	2	179
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	-	179

26-1W-31ccc.--*Driller's log of test hole in SW SW SW sec. 31, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,357.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt.....	5	5
Clay, brown to reddish-brown.....	20	25

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and gravel; very coarse sand from 35 to 50 feet.....	50	75
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, blue and brown to gray.....	30	105
Sand, fine to medium.....	5	110
Clay, brownish-gray to blue.....	19	129
Sand, fine to coarse, and gravel; clay streaks.....	21	150
Clay, sandy, brown; streaks of sand and gravel.....	10	160
Sand, fine to coarse, and gravel; tight.....	35	195
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue; and limestone.....	7	202

26-1W-33aaa.--*Driller's log of test hole in NE NE NE sec. 33, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,330.0 feet; depth to water, 6.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine.....	6	6
Sand, fine to coarse, with gravel.....	39	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, brown.....	9	54
Sand, fine to coarse, and fine gravel; clay streaks.....	51	105
Clay, green.....	3	108
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	113

26-1W-33ccc.--*Driller's log of test hole in SW SW SW sec. 33, T 26 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,358.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt.....	5	5

	Thickness, feet	Depth, feet
Clay, very sandy, red	20	25
Clay, brown	5	30
Sand, fine to coarse; gravel and clay streaks in lower 11 feet	16	46
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, brown and gray	11	57
Sand, fine to coarse, and gravel; clay streaks in lower 5 feet	23	80
Sand, fine to coarse, gray; a few clay streaks; some gravel in lower 25 feet	60	140
Clay, brown	4	144
Sand, coarse	6	150
Sand, fine to coarse, and gravel; some clay streaks	41	191
Clay, green	1	192
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	197

26-1W-33dda.--*Driller's log of test hole in NE SE SE sec. 33, T 26 S, R 1 W; drilled by the City of Wichita, December 1954. Altitude of land surface, 1,328 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand	4	6
Sand, fine to medium	29	35
Sand, fine to coarse; clay streak at 43 feet	12	47
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, sandy	15	62
Sand, fine to medium	43	105

26-2W-2cbb.--*Driller's log of observation well no. 17 in NW NW SW sec. 2, T 26 S, R 2 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., September 1960. Altitude of land surface, 1,373.1 feet.*

	Thickness, feet	Depth, feet
Soil	4	4
NEOGENE		
Pleistocene Series, undifferentiated		
Sand, fine to coarse, and gravel	20	24

	Thickness, feet	Depth, feet
Clay, blue	1	25
Sand, medium to coarse, and gravel	56	81
Clay, yellow	6	87
Sand, fine to coarse, and gravel; with clay lenses	13	100
Sand, fine to coarse, and gravel	20	120
Sand, medium to coarse, and gravel	10	130

26-2W-9aaa.--*Driller's log of test hole in NE NE NE sec. 9, T 26 S, R 2 W (Williams and Lohman, 1949, p. 438); drilled 1941. Altitude of land surface, 1,392 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Silt	22	22
Sand	56	78
Gravel	4	82
Sand	13	95
Sand and gravel	29	124
Silt and clay	11	135
Sand and gravel	45	180
Silt and clay	7	187
Sand and gravel	71	258
Silt and clay	2	260
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	261

26-2W-9bbb.--*Driller's log of test hole in NW NW NW sec. 9, T 26 S, R 2 W (Williams and Lohman, 1949, p. 438); drilled 1941. Altitude of land surface, 1,398 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Silt	24	24
Sand	9	33
Sand and gravel	33	66
Silt and clay	13	79
Sand and gravel	195	274
Silt and clay	2	276
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	277

26-2W-11ddd.--*Driller's log of test hole in SE cor. sec. 11, T 26 S, R 2 W (Williams and Lohman, 1949, p. 438); drilled 1941. Altitude of land surface, 1,368 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt	12	12
Sand	6	18
Sand and gravel	36	54
Sand	15	69
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt and clay	11	80
Sand and gravel	66	146
Silt and clay	8	154
Sand and gravel	45	199
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	200

26-2W-14ccc.--*Driller's log of test hole in SW cor. sec. 14, T 26 S, R 2 W (Williams and Lohman, 1949, p. 439); drilled 1941. Altitude of land surface, 1,370 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt	15	15
Sand and gravel	55	70
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt and clay	5	75
Sand	23	98
Silt and clay	32	130
Sand	10	140
Sand and gravel	30	170
Silt and clay	5	175
Sand	50	225
Silt and clay	5	230
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	231

26-2W-15aac.--*Sample log of test hole in SW NE NE sec. 15, T 26 S, R 2 W; drilled by Layne-Western Co. for the City of Wichita, 1959. Altitude of land surface, 1,381.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, very sandy	15	15
Sand, fine to coarse, some silt; arkosic	5	20
Sand, fine to coarse, some fine gravel; arkosic and fine to coarse gravel in lower 35 feet; white sandstone fragments in lower 15 feet	40	60
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, clayey, sandy, tan to grayish-tan	5	65
Sand, fine to coarse, and fine gravel, grayish-pink; arkosic; some tan to grayish-tan silt	10	75
Silt, sandy, light-tan to gray; clayey with snails in bottom 10 feet and streaks of fine to medium sand	15	90
Sand, fine to coarse, and fine to medium gravel, tan; arkosic with abundant quartz; some tan and gray clayey silt	30	120
Sand, fine to coarse, and fine to coarse gravel; arkosic; streaks of gray to tan sandy, clayey silt with snail and Dakota fragments from 125 to 135 feet; carbonaceous specks at 145 feet	30	150
Sand, fine to coarse, and fine gravel; arkosic, with some gray and tan sandy silt; some medium gravel in lower 15 feet	20	170
Silt, sandy, grayish-tan; many caliche pebbles	5	175
Sand, fine to medium, some coarse	5	180
Silt, very sandy, tan to gray; some caliche; clay silt with snails in lower 5 feet	15	195
Sand, fine to coarse, and fine gravel; arkosic; some clayey tan silt with caliche in lower 5 feet	10	205
Sand, fine to coarse, and fine to coarse gravel; arkosic; some material derived from Dakota Formation; with clayey tan silt and caliche	5	210
Sand, fine to coarse, some fine gravel; predominantly quartz with some arkose and material derived from the Dakota Formation; some medium and coarse gravel from 215 to 220 feet	19	229
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	-	229

26-2W-15aad.--*Sample log of test hole in SE NE NE sec. 15, T 26 S, R 2 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., 1959. Altitude of land surface, 1,376.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-tan to reddish-tan.....	15	15
Sand, fine to coarse, and fine gravel; arkosic with some silt.....	10	25
Sand, fine to coarse, and fine to coarse gravel; arkosic; some sandy, clayey tan silt.....	50	75
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, gray and tan; some clay with fossil fragments.....	5	80
Sand, fine to coarse; arkosic with abundant quartz; slightly silty.....	5	85
Sand, fine to coarse, and fine gravel; arkosic with quartz and streaks of tan silt; fine to coarse gravel in lower 20 feet.....	40	125
Silt, sandy, clayey, gray to grayish-tan; much caliche or marl; with streaks of sand and gravel in lower 5 feet.....	10	135
Sand, fine to coarse, and fine gravel; arkosic with much quartz and grayish-tan silt; fine to medium gravel in lower 5 feet.....	25	160
Silt, very sandy, grayish-tan to tan; some clay and caliche.....	15	175
Silt, very sandy, clayey, gray to dark gray-brown.....	10	185
Silt, sandy, clayey, gray to grayish-tan; sand streaks.....	5	190
Sand, fine to coarse, and fine gravel; arkosic; some pinkish-tan silt in upper 5 feet; no gravel in lower 10 feet.....	30	220
Sand, fine to coarse, grayish-tan; abundant quartz; some gravel and rubble derived from Dakota Formation.....	5	225
Sand, fine to coarse, and fine to medium gravel; arkosic with some gray and pinkish-tan silt.....	7	232
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	-	232

26-2W-16aaa.--*Driller's log of test hole in NE NE NE sec. 16, T 26 S, R 2 W (Williams and Lohman, 1949, p. 440); drilled 1941. Altitude of land surface, 1,386 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt	28	28
Sand	55	83
Silt and clay	14	97
Sand	93	190
Silt and clay	5	195
Sand	2	197
Silt and clay	4	201
Sand and gravel	41	242
Silt and clay	5	247
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	248

26-2W-20aaa.--*Driller's log of test hole in NE NE NE sec. 20, T 26 S, R 2 W (Williams and Lohman, 1949, p. 440); drilled 1941. Altitude of land surface, 1,378 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt and clay	23	23
Sand	69	92
Gravel	6	98
Sand	22	120
Gravel	8	128
Silt and clay	12	140
Sand	11	151
Gravel	7	158
Gravel and sand	18	176
Silt and clay	4	180
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	181

26-2W-22ccc.--*Driller's log of test hole in SW cor. sec. 22, T 26 S, R 2 W (Williams and Lohman, 1949, p. 440); augered 1941. Altitude of land surface, 1,368 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt and clay	51	51

	Thickness, feet	*Depth, feet*
Sand and gravel	29	80
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt and clay	14	94
Sand and gravel	81	175
Silt and clay	4	179
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	180

26-2W-26aaa.--*Sample log of test hole in NE NE NE sec. 26, T 26 S, R 2 W; drilled 1944. Altitude of land surface, 1,366.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, clayey, dark-gray to tan	6	6
Sand, fine to coarse, and fine gravel, slightly silty; arkosic; fine to medium gravel in lower 35 feet	49	55
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, clayey, sandy, tan to light grayish-tan; abundant caliche with some ash shards	9	64
Sand, fine to coarse, and fine to medium gravel; arkosic	21	85
Silt, clayey, gray and tan	2	87
Sand, fine to coarse, and fine to medium gravel; arkosic with streaks of clayey tan to grayish-tan silt; caliche in lower 6 feet	29	116
Silt, clayey, light grayish-tan; much caliche	2	118
Sand, fine to coarse, and fine gravel; arkosic with some grayish-tan clayey silt and caliche	82	200
Sand, fine to coarse, and fine to medium gravel; arkosic with abundant quartz	16	216
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	4	220

26-2W-26ccc.--*Sample log of test hole in SW SW SW sec. 26, T 26 S, R 2 W, drilled 1944. Altitude of land surface, 1,355.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-brown to grayish-tan.....	9	9
Sand, fine to medium; much tan silt.....	2	11
Silt, sandy, light tannish-gray.....	6	17
Sand, fine to coarse, and fine gravel; arkosic, with abundant quartz; some silt; medium gravel in lower 6 feet.....	19	36
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, dark-gray; many snails.....	4	40
Silt, sandy, grayish-tan.....	7	47
Sand, fine to coarse, and fine gravel; arkosic with streaks of sandy tan silt; medium gravel in lower 10 feet.....	23	70
Silt, sandy, tan; some caliche.....	11	81
Sand, fine to coarse, and fine gravel; arkosic.....	7	88
Silt, sandy, tan; thin bed of sand and gravel.....	9	97
Sand, fine to coarse, and fine to medium gravel; arkosic; some thin tan silt streaks and coarse gravel in lower 15 feet.....	38	135
Silt, sandy, clayey, grayish-tan to light grayish-tan; contains caliche.....	11	146
Sand, fine to coarse, and fine gravel; arkosic.....	30	176
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	-	176

26-2W-28ccc.--*Sample log of test hole in SW SW SW sec. 28, T 26 S, R 2 W; drilled 1944. Altitude of land surface, 1,386.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, brown to dark-tan; light tan in lower 10 feet.....	20	20
Sand, fine to coarse, and fine gravel; arkosic, with some tan silt and grayish-tan clay with caliche; medium gravel in lower 15 feet.....	25	45
Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, light-tan.....	6	51

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine to medium gravel	11	62
Silt, sandy, tannish-gray; some caliche	4	66
Sand, fine to coarse, and fine to medium gravel	2	68
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	2	70

26-2W-29aaa.--*Driller's log of observation well no. 6 in NE NE NE sec. 29, T 26 S, R 2 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co., September 1960. Altitude of land surface, 1,383.8 feet.*

	Thickness, feet	Depth, feet
Soil	5	5
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	5	10
Clay, sandy, tan	11	21
Sand, very fine to medium	9	30
Sand, fine to coarse, and gravel	3	33
Clay, gray	2	35
Sand, fine to coarse, and gravel; with clay streaks	5	40
Sand, coarse, and gravel	15	55
Sand, coarse to very coarse, and gravel	5	60
Sand, coarse, and gravel	16	76
Clay, yellow	2	78
Sand, coarse to very coarse, and gravel	5	83
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray, hard	7	90
Shale, blue, hard	8	98

26-2W-30aaa.--*Sample log of test hole in NE NE NE sec. 30, T 26 S, R 2 W; drilled 1944. Altitude of land surface, 1,396.7 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, brown to tan	20	20
Silt, sandy, light grayish-tan	6	26
Sand, fine to coarse, and fine gravel; arkosic	2	28

	Thickness, feet	Depth, feet
Silt, sandy, clayey, grayish-tan to pinkish-tan	6	34
Sand, fine to coarse, and fine to medium gravel; arkosic; coarse gravel and some grayish-tan clayey silt in lower 15 feet.	21	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	5	60

26-2W-31ddd.--*Sample log of test hole in SE SE SE sec. 31, T 26 S, R 2 W; drilled 1944. Altitude of land surface, 1,453.3 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, gray to pinkish-tan and tan; some caliche	37	37
Silt, clayey, sandy, grayish-tan; some caliche	18	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	3	58

26-2W-34ddd.--*Driller's log of test hole 65 in SE SE SE sec. 34, T 26 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,383.5 feet; depth to water, 40.3 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	16	18
Sand, fine	7	25
Clay, brown	16	41
Sand, fine to coarse, and gravel; some clay streaks	21	62
Clay, blue	2	64
Sand, fine to medium; streaks of blue clay	6	70
Sand, fine to coarse, and gravel; some clay.	10	80
Clay, blue to brown and blue; streaks of fine to medium sand	20	100
Sand, fine to coarse, and gravel; slightly tight	30	130
PERMIAN		
Lower Permian Series		

	Thickness, feet	*Depth, feet*
Wellington Formation		
Shale, blue	5	135

26-2W-36bbb.--*Driller's log of test hole 68 in NW NW NW sec. 36, T 26 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,367.9 feet; depth to water, 24.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	17	17
Clay, sandy	8	25
Sand, fine to coarse, and gravel; few clay streaks	44	69
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay	11	80
Sand, fine to coarse, and fine to medium gravel; some clay streaks in lower 31 feet	88	168
Clay, sandy	5	173
Sand, fine to coarse, and fine to medium gravel	27	200
Sand, medium to coarse, and gravel	30	230
Clay, green	2	232
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	237

26-3W-2aaa.--*Sample log of test hole in NE NE NE sec. 2, T 26 S, R 3 W; drilled 1939. Altitude of land surface, 1,407.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, grayish-brown to light-gray and tan; clayey with some sand, fine gravel and caliche in lower 15 feet	29	29
Sand, fine to coarse, grayish-pink; and fine to coarse gravel, arkosic	68	97
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan; some grayish-tan caliche pebbles	5	102

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine to medium gravel; arkosic with abundant quartz.....	8	110
Silt, sandy, grayish-tan; caliche pebbles...	5	115
Sand, fine to coarse, and fine to coarse gravel; arkosic with some silt and caliche in upper 6 feet, and tan silt and grayish-tan clay in lower 8 feet.....	28	143
Sand, fine to coarse, and fine to coarse gravel; arkosic with streaks of sandy, clayey tan silt with caliche pebbles in lower 10 feet.....	22	165
Caliche, sandy, very hard.....	2	167
Sand, fine to coarse, and fine to coarse gravel; arkosic with many iron-stained pebbles.....	11	178
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	12	190

26-3W-2bcc.--*Sample log of test hole in SW SW NW sec. 2, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,418.2 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, dark-gray.....	2	2
Silt, sandy, clayey, light- to medium-gray..	6	8
Silt, sandy, dark-tan to tan and grayish-tan to light-gray.....	20	28
Sand, fine to coarse, some fine to medium gravel; arkosic with streaks of sandy tan silt.....	32	60
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	8	68
Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, clayey, tan; contains caliche pebbles.....	3	71
Sand, fine to coarse, and fine to medium gravel; arkosic.....	25	96
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	4	100

26-3W-6bbb.--*Sample log of test hole in NW NW NW sec. 6, T 26 S, R 3 W, in ditch on east side of road, 35 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,511.7 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, tan; some caliche pebbles.....	37	37
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	3	40

26-3W-10bbc.--*Sample log of test hole in SW NW NW sec. 10, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,437.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits, undifferentiated)		
Silt, sandy, brown to tan; with some carbonaceous specks in lower 20 feet.....	30	30
Silt, sandy, grayish-tan to tan.....	19	49
Sand, fine to coarse, and fine to medium gravel; arkosic with some silt.....	6	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	57

26-3W-13ddd.--*Sample log of test hole in SE SE SE sec. 13, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,405.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, clayey, grayish-brown to grayish-tan.....	8	8
Silt, very sandy, tan.....	16	24
Sand, fine to coarse, and fine to medium gravel.....	51	75
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	77

26-3W-16abb.--*Sample log of test hole in NW NW NE sec. 16, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,472.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, clayey, dark-tan.....	6	6
Silt, sandy, dark- to light-tan; pebbles of caliche in lower 9 feet.....	13	19
Silt, very sandy, clayey, light grayish-tan to reddish-tan.....	9	28
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, maroon, gray, and green.....	8	36

26-3W-17cdd.--*Sample log of test hole in SE SE SW sec. 17, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,482.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, clayey, reddish-tan to light-gray and tan; abundant caliche.....	28	28
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, maroon and gray.....	2	30

26-3W-22ccc.--*Sample log of test hole in SW SW SW sec. 22, T 26 S, R 3 W, in ditch on east side of road, about 130 feet north of east-west road; augered August 1957. Altitude of land surface, 1,488.8 feet; depth to water, 29.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, light-gray to tan; some fine sand and clay in lower 5 feet.....	10	10
Silt, sandy, clayey, tan; some caliche pebbles.....	5	15
Silt, sandy, tan and reddish-tan; caliche in lower 32 feet.....	52	67
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red and green.....	1	68

26-3W-26aaa.--*Sample log of test hole in NE NE NE sec. 26, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,442.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and colluvium)		
Silt, sandy, brown to grayish-tan and tan...	17	17
Sand, fine to coarse; fine to medium gravel; with rubble derived from Dakota Formation in lower 1 foot.....	4	21
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, greenish-gray.....	2	23

26-3W-30aaa.--*Sample log of test hole in NW NW NW sec. 30, T 26 S, R 3 W, on south side of road about 200 feet west of north-south road; augered August 1947. Altitude of land surface, 1,511.4 feet; depth to water, 25.1 feet.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, grayish-tan to tan; some caliche.....	8	10
Silt, clayey, slightly sandy, grayish-brown to grayish-tan; some snail fragments.....	5	15
Silt, clayey, sandy, tan.....	5	20
Silt, very sandy, pinkish-tan; many caliche pebbles; shale fragments in lower 5 feet.	15	35
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red and grayish-green.....	-	35

26-3W-30bcc.--*Sample log of test hole in SW SW NW sec. 30, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,539.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, very sandy, light-brown.....	5	5

	Thickness, feet	*Depth, feet*
Silt, sandy, clayey, dark-tan.....	5	10
Silt, sandy, clayey, grayish-tan; contains caliche pebbles.....	29	39
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, reddish-brown.....	1	40

26-3W-33ddd.--*Sample log of test hole in SE SE SE sec. 33, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,497.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-gray.....	1	1
Silt, clayey, sandy, dark grayish-tan.....	4	5
Silt, sandy, tan; with caliche pebbles.....	15	20
Silt, very clayey, pinkish-tan; much caliche.....	12	32
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, reddish-brown.....	2	34

26-3W-36aaa.--*Sample log of test hole in NE NE NE sec. 36, T 26 S, R 3 W; drilled 1944. Altitude of land surface, 1,457.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan.....	1	1
Silt, sandy, clayey, dark-tan.....	6	7
Silt, sandy, pinkish-tan; caliche pebbles...	26	33
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, reddish-brown to grayish-green.....	7	40

26-4W-12ddd.--*Sample log of test hole in SE SE SE sec. 12, T 26 S, R 4 W, in ditch on north side of road, 30 feet west of center line of north-south road; augered August 1957. Altitude of land surface, 1,520.2 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess)

	Thickness, feet	Depth, feet
Silt, slightly sandy, dark-tan to reddish-tan	15	15
Silt, grayish-tan; some sand and caliche	10	25
Silt, reddish-brown	5	30
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	2	32

27-1W-2bbb.--*Driller's log of test hole in NW NW NW sec. 2, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,330.7 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, silty	5	5
Clay	5	10
Sand, fine to coarse, and gravel	40	50
Lower Pleistocene Subseries, undifferentiated		
Clay	2	52
Sand, fine to coarse	6	58
Clay, green	4	62
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	67

27-1W-2ddc.--*Driller's log of test hole in SW SE SE sec. 2, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,320.7 feet; depth to water, 15.3 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay	11	11
Sand, fine to coarse, and gravel	31	42
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and gravel; some clay streaks	12	54
Clay, greenish	5	59
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	64

27-1W-4ddd.--*Driller's log of test hole in SE SE SE sec. 4, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,330.2 feet; depth to water, 11.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	5	5
Clay, sandy	11	16
Sand, fine to coarse, and gravel	5	21
Clay	4	25
Sand, fine to coarse, and gravel; clay streaks	7	32
Sand, fine to coarse, and fine to medium gravel	22	54
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, with clay streaks	57	111
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	116

27-1W-7ccc.--*Driller's log of test hole in SW SW SW sec. 7, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,348.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	14	14
Clay, sandy	3	17
Sand, fine to coarse, and gravel; clay streaks	28	45
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, blue	56	101
Sand, fine to coarse; lower 5 feet contains clay streaks	13	114
Sand, fine to coarse	13	127
Clay, brown	10	137
Sand, fine to medium	34	171
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	4	175

27-1W-8bbb.--*Driller's log of test hole in NW NW NW sec. 8, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, August 1955. Altitude of land surface, 1,350.0 feet; depth to water, 24.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	17	17
Sand, fine to coarse, and fine to medium gravel	35	52
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay	7	59
Clay, sandy	16	75
Sand, fine to coarse, with fine to medium gravel	35	110
Clay	5	115
Sand, fine to coarse	10	125
Sand, fine to coarse, and gravel	45	170
Clay, with sand streaks	7	177
Clay, greenish	1	178
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue, lime streaks	2	180

27-1W-10cdc.--*Driller's log of test hole in SW SE SW sec. 10, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,315 feet; depth to water, 6.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, medium	3	5
Sand, coarse, and gravel	5	10
Sand, coarse	5	15
Sand, coarse, and gravel	10	25
Sand, fine to medium	5	30
Sand, coarse, and gravel	8	38
Illinoisan Stage (terrace deposits)		
Clay, yellow	1	39
Sand, fine to medium	10	49
Clay, blue	6	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	3	58

27-1W-10cdc.--*Driller's log of Emergency well test no. 7 in SW SE SW sec. 10, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,320 feet; depth to water, 14.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand and gravel, silty	2	5
Sand and gravel	5	10
Gravel and sand	4	14
Clay	1	15
Gravel, coarse to fine; some sand	5	20
Sand, fine to coarse, and fine to medium gravel	20	40
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, yellow	1	41
Clay, blue	14	55
Shale, blue	3	58

27-1W-11cad.--*Driller's log of Emergency well test no. 1, in SE NE SW sec. 11, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,320 feet; depth to water, 15.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	3	5
Sand, fine	5	10
Sand, fine to medium	5	15
Sand, fine to coarse, and gravel	10	25
Gravel, some sand	10	35
Sand, fine to coarse, and gravel	5	40
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, yellowish streaks	2	42
Clay, yellow to blue	3	45
Clay, blue	5	50
Shale, blue	2	52

27-1W-11ccb.--*Driller's log of Emergency well test no. 10, in NW SW SW sec. 11, T 27 S, R 1 W; drilled by the City of Wichita, November 1954. Altitude of land surface, 1,320 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, sandy and silty	2	2
Sand, fine	3	5
Sand, fine to medium	5	10
Sand, medium to coarse, some gravel	5	15
Sand, fine to coarse, and gravel	5	20
Sand, medium to coarse, and gravel; streak of blue clay at 24 feet	5	25
Sand and coarse gravel	5	30
Sand, fine to coarse, and gravel	5	35
Sand, fine to coarse, some gravel	5	40
Sand, fine to coarse, some coarse gravel	3	43
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, yellow to brown	7	50
Clay, yellow to blue	5	55
Clay, blue (shale)	15	70
Shale, blue	1	71

27-1W-15aaa.--*Driller's log of test hole no. 53, in NE NE NE sec. 15, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,314.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, silty	3	3
Clay	3	6
Sand, coarse, with medium gravel	36	42
Clay, greenish	3	45
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	50

27-1W-15dcdc.--*Driller's log of Emergency well test no. 5, in SW SE SW SE sec. 15, T 27 S, R 1 W; drilled October 1954. Altitude of land surface, 1,310 feet; depth to water, 14.0± feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine	2	5
Sand, fine to coarse	5	10
Sand, fine to coarse, and gravel	3	13
Clay, yellow	3	16
Sand, fine	4	20
Sand, fine to medium	10	30
Sand, fine to coarse, and gravel	5	35
Sand, fine to coarse	5	40
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellow	2	42
Shale, yellow, hard	2	44

27-1W-15ddd.--*Driller's log of test hole no. 49, in SE SE SE sec. 15, T 27 S, R 1 W, in road ditch; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,311 feet; depth to water, 11.3 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine	6	6
Sand, coarse, with medium gravel	38	44
Clay, greenish	1	45
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	6	51

27-1W-16ddd.--*Driller's log of test hole no. 50, in SE SE SE sec. 16, T 27 S, R 1 W, in road ditch; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,315.8 feet; depth to water, 10.0 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay	8	8
Sand, coarse, with fine to medium gravel	44	52
Clay, greenish	1	53
PERMIAN		

	Thickness, feet	*Depth, feet*
Lower Permian Series		
Wellington Formation		
Shale, blue	8	61

27-1W-17aaa.--*Driller's log of Emergency well test no. 8, in NE NE NE sec. 17, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,355 feet.*

	Thickness, feet	*Depth, feet*
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, clayey, reddish-tan; some fine sand	9	10
Silt, clayey, reddish-brown	5	15
Silt, clayey, brown	5	20
Silt, clayey, brown; with some fine sand	10	30
Clay, yellow	7	37
Sand, fine to medium	3	40
Sand, fine to coarse, brown; some very coarse gravel in lower 10 feet	15	55
Sand, fine to coarse	5	60
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to medium; some yellow clay streaks	5	65
Sand, fine to medium	5	70
Sand, fine to coarse	5	75
Sand, fine to medium, tight	15	90
Sand, fine to medium; with streaks of yellow clay	5	95
Sand, fine to coarse; some gravel in lower 5 feet	10	105
Gravel and sand, very coarse, loose	5	110
Sand, fine to coarse; some gravel	5	115
Sand, fine to coarse	10	125
Sand, fine to medium	5	130
Sand, fine to coarse; some gravel in upper 5 feet	10	140
Sand, fine to coarse; some gravel	5	145
Sand, fine to coarse	17	162
Clay, yellow; some shale	2	164
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	1	165

27-1W-17baa.--*Driller's log of Emergency well test no. 9, in NE NE NW sec. 17, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,340 feet; depth to water, 21.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, clayey, reddish-tan; sandy in lower 5 feet	9	10
Sand, fine	5	15
Sand, fine to coarse, some gravel	10	25
Sand, coarse	5	30
Sand, fine to coarse, and gravel	15	45
Gravel, fine to coarse, and sand	5	50
Pliocene(?) Series and Pleistocene Subseries, undifferentiated		
Clay, yellow	8	58
Sand, fine to medium	12	70
Sand, fine to coarse	5	75
Sand, fine to medium	25	100
Sand, fine to coarse	15	115
Sand, fine to medium	25	140
Sand, fine to coarse, and gravel	2	142
Clay, yellow	2	144
Sand, fine	8	152
Clay, brown; tough	2	154
Sand, fine to coarse, and gravel	1	155
Sand, fine to medium	10	165
Sand, fine to coarse, and gravel	5	170
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, yellow, and shale	2	172

27-1W-17cdd.--*Driller's log of well no. 1, in SE SE SW sec. 17, T 27 S, R 1 W; drilled by Layne-Western Co. for the Westlink Improvement District. Altitude of land surface, 1,335.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown; some sand and gravel	5	10
Sand, medium to fine, and gravel	5	15
Sand, fine to coarse, and gravel; a few clay balls	15	30
Sand, medium to coarse, and gravel	5	35
Clay, sandy, brown	1	36

	Thickness, feet	*Depth, feet*
Sand, medium to coarse, and gravel.....	25	61
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, brown.....	1	62
Sand, medium to coarse, and gravel.....	8	70
Sand, fine to medium.....	16	86
Sand, fine to medium; many clay streaks.....	4	90
Sand, fine to medium.....	5	95
Sand, medium to coarse, and gravel; a few clay streaks in lower 5 feet.....	10	105
Clay, sandy, brown.....	1	106
Sand, medium to coarse, and gravel.....	3	109
Clay, sandy, brown; streaks of fine sand....	11	120
Sand, fine to medium.....	10	130
Sand, medium to coarse.....	6	136
Clay, sandy, brown.....	2	138
Sand, medium to coarse.....	9	147
Sand, medium to coarse, and gravel.....	10	157
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	3	160

27-1W-19ccc.--*Driller's log of test hole no. 48 in SW SW SW sec. 19, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,327.8 feet.*

	Thickness, feet	*Depth, feet*
Soil.....	3	3
NEOGENE		
Lower Pleistocene Subseries, undifferentiated		
Clay, brown.....	12	15
Clay, red.....	15	30
Clay, blue-gray.....	17	47
Sand, fine to coarse; and clay streaks.....	23	70
Sand, medium to coarse, and gravel; some clay streaks.....	36	106
Clay, brown and gray.....	8	114
Sand, coarse, and gravel; a few clay streaks.....	26	140
Sand, medium to coarse, and gravel; a few clay streaks.....	10	150
Sand, cemented, and clay.....	10	160
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	9	169

27-1W-20bac.--*Driller's log of well no. 2 in SW NE NW sec. 20, T 27 S, R 1 W; drilled by Layne-Western Co. for the Westlink Improvement District. Altitude of land surface, 1,338 feet; depth to water, 25.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, sandy, red	8	13
Sand, fine to medium	7	20
Sand, fine to medium, and gravel; a few clay streaks	5	25
Sand, medium to coarse, and gravel; a few clay streaks	5	30
Sand, coarse, and gravel; and clay streaks	24	54
Clay, brown	2	56
Sand, coarse, and gravel; some clay streaks.	4	60
Sand, medium to coarse, and gravel; some clay streaks	4	64
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, blue and yellow	6	70
Clay, blue; streaks of tight sand and gravel	9	79
Sand, medium to coarse, and gravel; a few clay streaks	12	91
Clay, brown	2	93
Sand, medium to coarse, and gravel; streaks of brown clay	17	110
Clay, brown, and streaks of sand and gravel.	17	127
Sand, medium to coarse; a few clay streaks..	3	130
Sand, medium to coarse, and gravel; a few clay streaks	10	140
Sand, medium to coarse, and a few clay streaks	10	150
Sand, medium to coarse, and gravel; a few clay streaks	27	177
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	3	180

27-1W-23ccbd.--*Driller's log of test hole Emergency well test no. 6 in SE NW SW SW sec. 23, T 27 S, R 1 W; drilled by the City of Wichita, October 1954. Altitude of land surface, 1,305 feet; depth to water, 10.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		

	Thickness, feet	*Depth, feet*
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to medium	6	10
Sand, fine to coarse	12	22
Clay, brown	2	24
Sand, fine to coarse	3	27
Clay, blue	1	28
Sand, fine to medium	12	40
Sand, fine to coarse, and gravel	5	45
Sand, fine to coarse	7	52
Clay, yellow	1	53
Sand, fine to coarse, and gravel	3	56
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, yellow, hard	8	64
Clay, blue, soft	36	100
Clay, blue; shale and gypsum	30	130
Shale, blue	2	132

27-1W-26bbb.--*Driller's log of test hole no. 46 in NW NW NW sec. 26, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,306.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, silty	6	6
Sand, coarse; with gravel	19	25
Clay, black	3	28
Sand, coarse; with gravel and clay streaks	18	46
Lower Pleistocene Subseries, undifferentiated		
Sand, coarse	35	81
Clay, greenish	2	83
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	8	91

27-1W-26ddd.--*Driller's log of test hole no. 43 in SE SE SE sec. 26, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1956. Altitude of land surface, 1,298.1 feet; depth to water, 11.3 feet.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Recent stages (terrace deposits and alluvium)

	Thickness, feet	Depth, feet
Clay	9	9
Sand, medium to coarse	28	37
Sand, coarse; with gravel	3	40
Sand, coarse; with gravel and clay streaks	4	44
Sand, coarse; with gravel; contains greenish clay	9	53
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	8	61

27-1W-27ccc.--*Driller's log of test hole no. 44 in SW SW SW sec. 27, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,320 feet; depth to water, 22.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	8	8
Clay, sandy	9	17
Clay	2	19
Sand, coarse; with medium gravel and clay streaks	34	53
Lower Pleistocene Subseries, undifferentiated		
Clay	25	78
Sand, with clay streaks	17	95
Sand, coarse	20	115
Clay, greenish	1	116
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	-	116

27-1W-28bbb.--*Driller's log of test hole no. 47 in NW NW NW sec. 28, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,330 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red, sandy	9	11
Sand, medium to coarse	4	15
Sand, medium to coarse, and gravel	5	20
Sand, coarse, and gravel; a few clay streaks in lower 10 feet	20	40

	Thickness, feet	*Depth, feet*
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	5	45
Clay, brown and blue; with sand and gravel streaks in lower 5 feet	10	55
Sand, coarse, and gravel	10	65
Sand, medium to coarse, and gravel	10	75
Clay, brown, sandy	3	78
Sand, coarse, and gravel	12	90
Sand, medium to coarse, and gravel with clay streaks	5	95
Sand, coarse; some gravel	5	100
Clay, brown and gray; sand and gravel mixed	8	108
Sand, medium to coarse, and gravel	32	140
Sand, coarse	10	150
Clay, green	5	155
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	160

27-1W-30ddd.--*Driller's log of test hole no. 45 in SE SE SE sec. 30, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,326.5 feet; depth to water, 23.7 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red, sandy	19	24
Clay, blue	5	29
Sand, coarse; with gravel	19	48
Lower Pleistocene Subseries, undifferentiated		
Clay, brown, sandy	19	67
Sand, fine to medium; with clay streaks	13	80
Sand, fine to coarse; a few clay streaks	20	100
Sand, medium to coarse, and gravel; a few clay streaks	30	130
Clay, brown	3	133
Sand, coarse; some medium gravel in lower 7 feet	14	147
Clay, green	5	152
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	157

27-1W-32ccc.--*Driller's log of test hole no. 42 in SW SW SW sec. 32, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,325 feet; depth to water, 27.5 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	3	7
Sand, medium to coarse, and gravel	8	15
Sand, coarse, and gravel; a few clay streaks	15	30
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	5	35
Clay, brownish-gray	30	65
Clay, blue	35	100
Clay, blue and brown; a few sand streaks	7	107
Sand, medium to coarse, and gravel	18	125
Sand, coarse; some medium gravel	15	140
Sand, medium to coarse, and gravel; a few clay streaks	4	144
Clay, brown	2	146
Sand, medium to coarse, gray; clay streaks	4	150
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	155

27-1W-32ddd.--*Driller's log of test hole no. 41 in SE SE SE sec. 32, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,328 feet; depth to water, 35.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	15	15
Sand, coarse	15	30
Sand, coarse; with gravel	14	44
Sand, coarse, and fine to medium gravel	47	91
Lower Pleistocene Subseries, undifferentiated		
Clay	39	130
Sand, coarse	11	141
Clay, greenish	3	144
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	6	150

27-1W-33dad.--*Driller's log of test hole of well no. 1 in SE NE SE sec. 33, T 27 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita airport, December 1952. Altitude of land surface, 1,321 feet.*

	Thickness, feet	*Depth, feet*
Fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red	7	10
Clay, sandy	6	16
Sand, medium to coarse	9	25
Sand, medium to coarse, and gravel	14	39
Sand, coarse, and gravel; a few clay streaks	24	63
Lower Pleistocene Subseries, undifferentiated		
Clay	12	75
Sand, fine, white	5	80
Sand, medium to coarse, white	23	103
Clay	2	105
Sand, medium to coarse, and gravel	8	113
Sand, coarse, and clay streaks	22	135
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	140

27-1W-33ddc.--*Driller's log of well no. 2 in SW SE SE sec. 33, T 27 S, R 1 W; drilled by Layne-Western Co. for the City of Wichita airport, August 1953. Altitude of land surface, 1,322 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, reddish-brown; hard	5	5
Clay, red and gray; hard	5	10
Clay, red	4	14
Clay, red; sandy	2	16
Sand, fine; clay streaks	4	20
Sand, fine to medium	5	25
Sand, medium to coarse, and gravel; a few clay streaks	41	66
Lower Pleistocene Subseries, undifferentiated		
Clay, gray	8	74
Clay, with sand streaks	8	82
Sand, fine, with clay streaks	10	92
Clay	6	98

	Thickness, feet	*Depth, feet*
Sand, fine to medium; clay streaks.....	52	150
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale.....	1	151

27-1W-34ddd.--*Driller's log of test hole no. 40 in SE SE SE sec. 34, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,295 feet; depth to water, 7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine.....	8	8
Sand, coarse, with medium gravel.....	44	52
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy.....	6	58
Sand, coarse.....	17	75
Clay, sandy.....	12	87
Sand, medium.....	6	93
Clay, greenish.....	2	95
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	6	101

27-1W-35ddd.--*Driller's log of test hole no. 39 in SE SE SE sec. 35, T 27 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,295.4 feet; depth to water, 9.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay.....	7	7
Sand, fine to coarse.....	45	52
Lower Pleistocene Subseries, undifferentiated		
Clay.....	4	56
Sand, coarse; with fine to medium gravel....	14	70
Clay, greenish.....	4	74
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	7	81

27-2W-3bbb.--*Sample log of test hole in NW NW NW sec. 3, T 27 S, R 2 W; drilled 1944. Altitude of land surface, 1,367.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, light tannish-gray.....	8	8
Silt, sandy, tan.....	12	20
Sand, fine to coarse, and fine to medium gravel; arkosic.....	30	50
Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, gray; some caliche.....	10	60
Silt, sandy, tannish-gray; more caliche.....	8	68
Sand, fine to coarse, and fine to medium gravel; arkosic.....	7	75
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	3	78

27-2W-9bbb.--*Sample log of test hole in NW NW NW sec. 9, T 27 S, R 2 W; drilled 1944. Altitude of land surface, 1,444.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, reddish-tan.....	30	30
Silt, sandy, pinkish-tan; some caliche.....	30	60
Silt, pinkish-tan; caliche, and fine to coarse sand.....	5	65
Illinoisan Stage (terrace deposits)		
Silt, sandy, clayey, grayish-tan; some caliche.....	15	80
Sand, fine to coarse, and fine gravel; arkosic; much clayey silt.....	14	94
Silt, sandy, tan; some caliche.....	4	98
Sand, fine to coarse, and fine gravel; very silty and partly cemented.....	2	100
Sand, fine to coarse, and fine gravel; much grayish-tan sandy silt, caliche, and shale pebbles.....	11	111
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, reddish-brown and gray.....	3	114

27-2W-9ddd.--*Sample log of test hole in SE SE SE sec. 9, T 27 S, R 2 W, in ditch on north side, 100 feet west of north-south road; augered August 1957. Altitude of land surface, 1,391.2 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, tan	5	5
Silt, reddish-brown	5	10
Silt, sandy, reddish-brown	10	20
Sand, fine to coarse; some gray silt	5	25
Sand, fine to coarse, and fine to coarse gravel; some silt streaks	5	30
Silt, reddish-tan	5	35
Sand, fine to coarse; some silt streaks	5	40
Sand, fine to coarse, reddish-brown; sandy silt in lower part	5	45
Sand, fine to coarse, and fine gravel	9	54
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	55

27-2W-10bbb.--*Driller's log of test hole no. 61 in NW NW NW sec. 10, T 27 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,376.5 feet; depth to water, 32.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits, undifferentiated)		
Clay, red	10	15
Clay, brown	5	20
Clay, reddish-brown	10	30
Clay, brown, sandy; with sand streaks	10	40
Sand, fine to coarse, and gravel; clay streaks	30	70
Clay, green	4	74
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	79

27-2W-11ccc.--*Driller's log of test hole no. 56 in SW SW SW sec. 11, T 27 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,375.1 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Clay	38	38
Sand, coarse; with gravel and clay streaks	23	61
Lower Pleistocene Subseries, undifferentiated		
Clay	7	68
Sand, coarse	17	85
Clay, greenish	2	87
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	92

27-2W-18aaa.--*Sample log of test hole in NE NE NE sec. 18, T 27 S, R 2 W, on road shoulder, 30 feet south of center-line of road to west; augered August 1957. Altitude of land surface, 1,411.4 feet; depth to water, 8.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown	5	5
Silt, grayish-tan	5	10
Silt, sandy, grayish-tan	5	15
Silt, sandy, gray	10	25
Sand and gravel	10	35
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	5	40

27-2W-22ccc.--*Sample log of test hole in SW SW SW sec. 22, T 27 S, R 2 W, on road shoulder, 6 feet north of concrete, 165 feet east of north-south road; augered August 1957. Altitude of land surface, 1,429.0 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	4	4
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, reddish-brown	3	7
Silt, sandy, reddish-brown; some caliche	11	18
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, green	1	19

27-2W-24bbb.--*Driller's log of test hole no. 52 in NW NW NW sec. 24, T 27 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,345.8 feet; depth to water, 20.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages [loess, slope deposits (colluvium), and terrace deposits, undifferentiated]		
Clay, sandy, red	8	12
Sand, fine to medium	3	15
Sand, medium to coarse	10	25
Sand, coarse, and gravel; a few clay streaks	5	30
Clay, brown	3	33
Sand, coarse, and gravel	5	38
Clay, brown	1	39
Sand, coarse, and gravel; a few clay streaks	30	69
Clay, green	1	70
Clay, red	1	71
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	76

27-2W-26aaa.--*Driller's log of test hole no. 51 in NE NE NE sec. 26, T 27 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,334.4 feet; depth to water, 17.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	12	12
Sand, coarse	16	28
Clay, brown	2	30
Sand, coarse	1	31
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	19	50

27-2W-33ddd.--*Sample log of test hole in SE SE SE sec. 33, T 27 S, R 2 W; augered August 1957. Depth to water, 20.2 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan; some caliche	3	5
Silt, sandy, reddish-tan	5	10
Silt, sandy, clayey, tan	5	15
Silt, very sandy, clayey, tan	3	18
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; 100 percent quartz, some red and green shale fragments, much tan silt, fragments of Dakota Formation in lower 5 feet	12	30
Sand, fine to coarse, and fine gravel, silty; some thin streaks of gray clay	6	36
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	37

27-3W-3bbb.--*Sample log of test hole in NW NW NW sec. 3, T 27 S, R 3 W, in ditch on south side of road, 100 feet east of north-south road; augered August 1957. Altitude of land surface, 1,487(T) feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, grayish-tan	5	5
Silt, sandy, tan	5	10
Silt, light grayish-tan; some sand	5	15
Silt, sandy, clayey, light grayish-tan; some caliche	10	25
Silt, very sandy, pinkish-tan, reddish-tan at base; some caliche	14	39
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, green	1	40

27-3W-5bbb.--*Sample log of test hole in NW NW NW sec. 5, T 27 S, R 3 W, in ditch on south side of road, 80 feet east of north-south road; augered August 1957. Altitude of land surface, 1,521 feet; depth to water, 38.1 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Wisconsinan and Illinoisan stages (loess)		
Silt, very clayey, light-gray; few caliche pebbles	5	5
Silt, clayey, light-gray to tan; some sand and many caliche pebbles	20	25
Silt, sandy, light grayish-tan; some caliche in lower 5 feet	10	35
Silt, very sandy, grayish-tan, reddish-tan at base; some caliche	15	50
Silt, reddish-tan; some sand	5	55
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	5	60

27-3W-12aaa.--*Sample log of test hole in NE NE NE sec. 12, T 27 S, R 3 W, in ditch on south side of road, 50 feet west of the center line of north-south road; augered August 1957. Altitude of land surface, 1,454 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, light-brown; some sand	5	5
Silt, reddish-tan; some sand	5	10
Silt, sandy, tan	10	20
Silt, pinkish-tan; some sand	19	39
Silt, light-gray to pinkish-tan; calcareous with some sand	11	50
Lower Pleistocene Subseries, undifferentiated		
Sand, silty	24	74
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	1	75

27-3W-13bbb.--*Sample log of test hole in NW NW NW sec. 13, T 27 S, R 3 W, on south side of road, 15 feet north of fence and 50 feet west of center line of north-south road; augered August 1957. Altitude of land surface, 1,457.7 feet; depth to water, 25.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, clayey, pinkish-tan	5	5
Silt, tan; some sand	5	10
Silt, sandy, pinkish-tan; fine to medium, silty sand at base	10	20

	Thickness, feet	Depth, feet
Silt, clayey, very sandy, greenish to pinkish-tan; some caliche; red shale fragments in lower 5 feet.....	10	30
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, silty, pinkish-tan....	7	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	1	38

27-3W-15ddd.--*Sample log of test hole in SE SE SE sec. 15, T 27 S, R 3 W, on north side of road, 15 feet south of fence and 75 feet west of black-top road; augered August 1957. Altitude of land surface, 1,488.2 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, clayey, dark-gray.....	3	5
Silt, dark-gray; some fine sand and much caliche.....	5	10
Silt, sandy, light grayish-tan; some caliche.....	5	15
Silt, sandy, pinkish-tan; much caliche.....	15	30
Silt, light grayish-tan; with much fine to coarse sand; clayey in bottom 4 feet.....	9	39
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	3	42

27-3W-16bbb.--*Sample log of test hole in NW NW NW sec. 16, T 27 S, R 3 W, in ditch on south side of road, 40 feet east of center line of north-south road; augered August 1957. Altitude of land surface, 1,501 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, brownish-gray; some sand.....	5	5
Silt, tannish-gray; caliche pebbles; some sand in lower 5 feet.....	15	20
Silt, grayish-tan; caliche pebbles.....	5	25
Silt, sandy, tan; caliche pebbles.....	10	35
Silt, sandy, clayey, grayish-tan.....	7	42
Silt, sandy, red; many shale fragments.....	5	47

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red and green	2	49

27-3W-18bbb.--*Sample log of test hole in NW NW NW sec. 18, T 27 S, R 3 W, in ditch on east side of road, 30 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,481.9 feet; depth to water, 7.30 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, very sandy, yellowish-tan; some caliche in lower 5 feet	10	10
Silt, very sandy, yellowish-tan to reddish-tan; some caliche	7	17
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; much red silt in upper part; contains shale fragments	9	26
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, reddish-brown	1	27

27-3W-19ddd.--*Sample log of test hole in SE SE SE sec. 19, T 27 S, R 3 W, on road shoulder, 75 feet west of north-south road; augered August 1957. Altitude of land surface, 1,463.5 feet; depth to water, 20.2 feet.*

	Thickness, feet	Depth, feet
Road fill	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown	5	7
Sand, fine, silty, dark-tan	3	10
Sand, fine	10	20
Sand, fine to medium	3	23
Sand, fine to coarse	26	49
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	50

27-3W-24ddd.--*Sample log of test hole in SE SE SE sec. 24, T 27 S, R 3 W, on road shoulder, 40 feet north of center line of east-west road; augered August 1957. Altitude of land surface, 1,452.5 feet; depth to water, 21.9 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, gray	7	10
Silt, sandy, tan	5	15
Silt, sandy, grayish-tan; caliche pebbles	7	22
Sand, fine to coarse, silty	5	27
Silt, red	1	28
Sand, fine to coarse, silty	3	31
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, green	1	32

27-3W-27bbb.--*Sample log of test hole in NW NW NW sec. 27, T 27 S, R 3 W, in ditch on east side of road, 155 feet south of east-west road; augered August 1957. Altitude of land surface, 1,463.2 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, red	14	14
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	15

27-3W-29ddd.--*Sample log of test hole in SE SE SE sec. 29, T 27 S, R 3 W, in ditch on west side of road, 80 feet north of highway 54; augered August 1957. Altitude of land surface, 1,444 feet; depth to water, 10.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, grayish-brown to tan at base	5	5
Silt, sandy, light grayish-tan, calcareous	4	9
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; arkosic, some tan silt streaks; medium gravel in lower 14 feet	20	29
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	30

27-4W-9bbb.--*Sample log of test hole in NW NW NW sec. 9, T 27 S, R 4 W, on south side of road, 35 feet east of center line of north-south road; augered August 1957. Altitude of land surface, 1,419.5 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, reddish-brown.....	6	6
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	7

27-4W-11ccc.--*Sample log of test hole in SW SW SW sec. 11, T 27 S, R 4 W, in ditch on north side of road, 70 feet east of center line of north-south road; augered August 1957. Altitude of land surface, 1,482.4 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt and clay, sandy, tan.....	10	10
Silt, sandy, tan; contains a hard lime-cemented zone.....	5	15
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	16

27-4W-26aaa.--*Sample log of test hole in NE NE NE sec. 26, T 27 S, R 4 W, on road shoulder, 150 feet south of east-west road; augered August 1957. Altitude of land surface, 1,456.7 feet; depth to water, 23.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, sandy, reddish-brown.....	2	2
Sand, fine to coarse, silty, grayish-brown..	7	9
Sand, fine, silty.....	1	10
Silt, sandy, tan.....	5	15
Sand, fine, tan.....	5	20
Sand, fine to coarse; silty in lower 5 feet.	10	30
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	31

28-2E-8cdd.--*Sample log of test hole in SE SE SW sec. 8, T 28 S, R 2 E; drilled 1944. Altitude of land surface, 1,385 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, dark-gray	2	2
Silt, clayey, tan; some sand	4	6
Silt, sandy, clayey, tan; some caliche pebbles	4	10
Silt, very clayey, sandy, tan; much caliche and carbonaceous specks	18	28
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	2	30

28-2E-12ddd.--*Sample log of test hole in SE SE SE sec. 12, T 28 S, R 2 E; augered July 1957. Altitude of land surface, 1,344.0 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Soil	3	3
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	4

28-2E-13bbb.--*Sample log of test hole in NW NW NW sec. 13, T 28 S, R 2 E, on south side of road, 30 feet west of center line of north-south road; augered July 1957. Altitude of land surface, 1,364.0 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown	13	15
Clay, tan	8	23
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	24

28-2E-14bbb.--*Sample log of test hole in NW NW NW sec. 14, T 28 S, R 2 E, on south side of road, 15 feet east of center line of north-south road; augered July 1957. Altitude of land surface, 1,366.3 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, dark-brown	4	5
Clay, light-brown	6	11
Clay, yellowish-brown	7	18
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	1	19

28-2E-16aaa.--*Sample log of test hole in NE NE NE sec. 16, T 28 S, R 2 E, on south side of road, 30 feet west of stop sign; augered July 1957. Altitude of land surface, 1,359.0 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown	7	8
Clay, reddish-brown	4	12
Clay, tan; some gravel	8	20
PERMIAN		
Lower Permian Series		
Wellington Formation		
Limestone	-	20

28-2E-17aaa.--*Sample log of test hole in NE NE NE sec. 17, T 28 S, R 2 E, on south side of road, 25 feet west and 25 feet north of pipeline marker; augered July 1957. Altitude of land surface, 1,374.5 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, red	5	5
Clay, reddish-brown; gravel	8.5	13.5
Gravel	1.5	15
Clay, grayish-green	5	20
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale	-	20

28-2E-17bbb.--*Sample log of test hole in NW NW NW sec. 17, T 28 S, R 2 E, on south side of road; augered July 1957. Altitude of land surface, 1,359 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, yellowish-brown	6	7
Clay, red	2	9
Clay, greenish-yellow	-	9

28-2E-27aab.--*Driller's log of test hole no. 1 in NW NE NE sec. 27, T 28 S, R 2 E; drilled by Layne-Western Co. for the Riverview Country Club, July 1959. Altitude of land surface, 1,343 feet; depth to water, 22.4 feet.*

	Thickness, feet	Depth, feet
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, sandy, brown	7	8
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellowish-green	12	20
Shale, green	15	35
Shale, grayish-green	10	45
Shale, blue	23	68

28-2E-27bcc.--*Driller's log of test hole in SW SW NW sec. 27, T 28 S, R 2 E; drilled by Layne-Western Co. for the Riverview Country Club, July 1959. Altitude of land surface, 1,329(T) feet; depth to water, 26.5 feet.*

	Thickness, feet	Depth, feet
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown	9	10
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, greenish-yellow	25	35
Shale, green	15	50
Shale, blue and brown	10	60
Shale, blue	20	80

28-2E-27cca.--*Driller's log of test hole no. 3 in NE SW SW sec. 27, T 28 S, R 2 E; drilled by Layne-Western Co. for the Riverview Country Club, July 1959. Altitude of land surface, 1,300(T) feet; depth to water, 9.7 feet.*

	Thickness, feet	Depth, feet
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown	15	20
Clay, greenish-brown	5	25
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellowish-green	15	40
Shale, blue	30	70

28-2E-27dbd.--*Driller's log of test hole no. 4 in SE NW SE sec. 27, T 28 S, R 2 E; drilled by Layne-Western Co. for the Riverview Country Club, July 1959. Altitude of land surface, 1,330 feet; depth to water, 31.9 feet.*

	Thickness, feet	Depth, feet
Soil	4	4
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, yellowish-green	16	20
Shale, green	20	40
Shale, grayish-green	20	60
Shale, blue	10	70

28-1E-5aad.--*Driller's log of Herman Hill Park well in SE NE NE sec. 5, T 28 S, R 1 E; drilled by the Wichita Park Board for the City of Wichita. Altitude of land surface, 1,285 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy	4	4
Sand, fine to coarse, and fine to coarse gravel	30	34
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	3	37

28-1E-7babb.--*Driller's log of Park well in NW NW NE NW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the City of Wichita. Altitude of land surface, 1,283 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy	3	3
Clay, gray	7	10
Sand, fine to coarse, and fine to coarse gravel	35	45
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	3	48

28-1E-7ccc.--*Driller's log of test hole no. 18 in SW SW SW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,282.6 feet; depth to water, 10.6 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	4	7
Sand, fine	3	10
Sand, fine to coarse, and gravel	10	20
Sand, medium to coarse, and gravel	7	27
Clay, blue	2	29
Sand, medium to coarse, and gravel; a few clay streaks	11	40
Sand, medium to coarse, and gravel	10	50
Clay, green	1	51
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	56

28-1E-7cdc.--*Driller's log of test hole no. 17 in SW SE SW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,282.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, silty	8	8

	Thickness, feet	Depth, feet
Sand, coarse, with gravel	22	30
Sand, coarse, with gravel and clay streaks	24	54
PERMIAN		
Lower Permian Series		
Wellington Formation		
Clay, blue	3	57
Shale, blue	4	61

28-1E-11ccd.--*Driller's log of test hole no. 1 in SE SW SW sec. 11, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,309.4 feet; depth to water, 19.6 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown; hard	16	18
Illinoisan Stage (terrace deposits)		
Sand, medium to coarse	2	20
Sand, fine to coarse, and gravel; a few clay streaks	6	26
Clay, greenish-brown	7	33
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	38

28-1E-14bbb.--*Driller's log of test hole no. 2 in NW NW NW sec. 14, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,286.4 feet.*

	Thickness, feet	Depth, feet
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, sandy, brown	5	7
Clay, brown and gray	3	10
Clay, brown, hard	6	16
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	14	30

28-1E-15aba.--*Driller's log of test hole in NE NW NE sec. 15, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,267.0 feet; depth to water, 7.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse	14	16
Clay, blue	4	20
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	7	27

28-1E-15baa.--*Driller's log of test hole no. 4 in NE NE NW sec. 15, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,267.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand	4	4
Sand, medium to coarse	7	11
Sand, with gravel	4	15
Clay, greenish	2	17
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	9	26

28-1E-15bba.--*Driller's log of test hole no. 5 in NE NW NW sec. 15, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,268.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, silty	6	6
Sand, with gravel	12	18
Clay, greenish	1	19
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	24

28-1E-16aaa.--*Driller's log of test hole no. 6 in NE NE NE sec. 16, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,271.4 feet; depth to water, 6.5 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse	17	19
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	24

28-1E-17aaa.--*Driller's log of test hole no. 10 in NE NE NE sec. 17, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,275.8 feet; depth to water, 8.3 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, medium to coarse, and gravel	15	18
Clay, sandy, gray	2	20
Sand, medium to coarse, and gravel; a few clay streaks in lower 5 feet	10	30
Sand, coarse, and gravel; a few gray clay streaks	6	36
Clay, greenish-brown	2	38
Clay, blue	2	40
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	45

28-1E-18aaa.--*Driller's log of test hole no. 14 in NE NE NE sec. 18, T 28 S, R 1 E; drilled July-August 1955. Altitude of land surface, 1,279.0 feet; depth to water, 9.3 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse, and gravel	12	16

	Thickness, feet	Depth, feet
Clay, gray, soft; has sand streaks.....	3	19
Sand, fine to coarse, and gravel.....	6	25
Sand, medium to coarse, and gravel; a few clay streaks.....	20	45
Clay, gray.....	4	49
Clay, blue.....	1	50
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	55

28-1E-25cbb.--*Sample log of test hole in NW NW SW sec. 25, T 28 S, R 1 E; drilled 1944. Altitude of land surface, 1,300 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-gray.....	1	1
Silt, sandy, tan.....	3	4
Silt, sandy, tan; carbonaceous specks.....	16	20
Silt, clayey; some sand, carbonaceous specks, and caliche.....	10	30
Silt, sandy, light grayish-tan, clayey; some caliche.....	7	37
Silt, sandy, light grayish-tan, clayey, and fine to medium sand; much caliche.....	3	40
Illinoisan Stage (terrace deposits)		
Sand, fine to coarse, and fine to medium gravel; arkosic with some tan silt.....	10	50
Sand, fine to coarse, tan; cement.....	1	51
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	3	54

28-1E-34bda.--*Sample log of test hole in NE SE NW sec. 34, T 28 S, R 1 E; drilled 1944. Altitude of land surface, 1,258.2 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark grayish-tan.....	3	3
Sand, fine to coarse, and fine to coarse gravel; arkosic.....	21	24
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Wellington Formation		
Shale, gray	4	28

28-1E-34daa.--*Sample log of test hole in NE NE SE sec. 34, T 28 S, R 1 E; drilled 1944. Altitude of land surface 1,253.1 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-gray	3	3
Sand, fine to coarse, and fine to medium gravel; arkosic	29	32
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	8	40

28-1E-35bba.--*Sample log of test hole in NE NW NW sec. 35, T 28 S, R 1 E; drilled 1944. Altitude of land surface, 1,258 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown	1	1
Silt, sandy, tannish-gray; some caliche	7	8
Sand, fine to coarse, and fine to coarse gravel; arkosic	12	20
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	7	27

28-1W-4cdc.--*Driller's log of test hole no. 626-21-3 in SW SE SW sec. 4, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,298.3 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, gray	16	16
Sand, coarse; with gravel	4	20
Clay, gray	6	26

	Thickness, feet	*Depth, feet*
Sand, coarse; with gravel.....	11	37
Lower Pleistocene Subseries, undifferentiated		
Clay, brown.....	2	39
Sand, coarse; with gravel and clay balls....	30	69
Clay.....	3	72
Sand, coarse; with gravel and clay balls....	29	101
Sand, coarse; with gravel.....	5	106
Clay, greenish.....	1	107
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	112

28-1W-7ccc.--*Sample log of test hole in SW SW SW sec. 7, T 28 S, R 1 W, in ditch on east side of road, 50 feet north of east-west road; augered August 1957. Altitude of land surface, 1,326.6 feet; depth to water, 15.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-brown to tan at base.....	5	5
Silt, sandy, tan.....	5	10
Silt, sandy, light grayish-tan.....	4	14
Sand, fine to medium; arkosic with much quartz; some grayish-tan, sandy silt.....	6	20
Sand, fine to coarse; arkosic, much quartz; some silt.....	5	25
Sand, fine to coarse; some fine to medium gravel.....	15	40
Sand, fine to coarse; arkosic; very little gravel with a few thin silt streaks.....	10	50
Sand, fine to coarse, and fine to medium gravel; arkosic; poor returns.....	25	75

28-1W-8aaa.--*Driller's log of test hole no. 809-T-4 in NE NE NE sec. 8, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,296.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown.....	8	8
Clay, with gravel.....	5	13
Clay.....	9	22
Sand, and medium coarse gravel.....	18	40
Lower Pleistocene Subseries, undifferentiated		
Sand, with clay balls.....	46	86

	Thickness, feet	Depth, feet
Sand, fine	29	115
Sand, medium coarse gravel	8	123
Clay, greenish	2	125
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	130

28-1W-8bbb.--*Driller's log of test hole no. 38 in NW NW NW sec. 8, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,325.8 feet; depth to water, 21.8 feet.*

	Thickness, feet	Depth, feet
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, reddish-brown	5	9
Clay, gray	7	16
Sand, fine to medium, red	4	20
Sand, coarse	5	25
Sand, medium to coarse, and gravel	10	35
Sand, coarse, and gravel	5	40
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy, brown and gray	12	52
Sand, medium to coarse, and clay streaks	4	56
Clay, sandy, brown and gray	4	60
Clay, blue	8	68
Clay, brown and gray	12	80
Clay, sandy, red	10	90
Clay, sandy, red, and some sand streaks	10	100
Sand, medium to coarse,and gravel	9	109
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, green	1	110
Shale, blue	5	115

28-1W-9abb.--*Driller's log of test hole no. 626-21-2 in NW NW NE sec. 9, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,311.6 feet; depth to water, 24.0 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	16	16
Sand, coarse; with clay	7	23
Sand, coarse; with brown rock	52	75

	Thickness, feet	Depth, feet
Lower Pleistocene Subseries, undifferentiated		
Clay	35	110
Sand, coarse	12	122
Clay, greenish	3	125
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	130

28-1W-9cbb.--*Driller's log of test hole no. 809-T-2 in NW NW SW sec. 9, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,309.7 feet; depth to water, 24.1 feet.*

	Thickness, feet	Depth, feet
Soil	1	1
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red	12	13
Sand, coarse, and gravel	8	21
Clay, brown	16	37
Sand, fine to coarse; a few clay streaks	8	45
Sand, medium to coarse, and gravel	4	49
Lower Pleistocene Subseries, undifferentiated		
Clay, brown and blue	11	60
Clay, brown and blue; a few sand streaks	10	70
Sand, fine to medium; a few clay streaks	10	80
Sand, fine to coarse; a few clay streaks	15	95
Sand, fine to coarse	5	100
Sand, medium to coarse, and gravel	5	105
Sand, fine to coarse	5	110
Sand, medium to coarse, and gravel	5	115
Clay, blue	2	117
Sand, coarse, and gravel	22	139
PERMIAN		
Lower Permian Series		
Wellington Formation		
Rock	1	140
Clay, greenish-brown	2	142
Shale, blue	5	147

28-1W-10aaa.--*Driller's log of test hole no. 813-T-4 in NE NE NE sec. 10, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,294.9 feet; depth to water, 12.4 feet.*

	Thickness, feet	Depth, feet
Soil	5	5
NEOGENE		

	Thickness, feet	*Depth, feet*
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, sandy, red	14	19
Sand, medium to coarse, and gravel; a few clay streaks	11	30
Sand, coarse, and gravel; a few clay streaks	10	40
Lower Pleistocene Subseries, undifferentiated		
Clay, brown; a few sand streaks	5	45
Sand, medium to coarse, and gravel	5	50
Sand, coarse, and gravel	5	55
Clay, brown	1	56
Sand, medium to coarse, and gravel; clay streaks	4	60
Sand, fine to coarse, and clay streaks	20	80
Sand, medium to coarse, and gravel	11	91
Clay, brown	2	93
Sand, medium to coarse, and gravel	7	100
Sand, medium to coarse	10	110
Clay, green	2	112
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	-	112

28-1W-10bbb.--*Driller's log of test hole no. 811-T-4 in NW NW NW sec. 10, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,311.2 feet; depth to water, 25.4 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red	10	15
Sand, medium to coarse, and gravel	5	20
Sand, coarse, and gravel; clay streaks	20	40
Sand, coarse, and gravel	5	45
Sand, medium to coarse, and some gravel	5	50
Sand, medium to coarse, and gravel	12	62
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse	25	87
Clay, sandy, gray and brown; mixed with sand	18	105
Sand, fine to coarse, and clay streaks	5	110
Sand, fine to coarse	6	116
Clay, green	2	118
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	-	118

28-1W-10cbb.--*Driller's log of test hole no. 811-T-2 in NW NW SW sec. 10, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,308.2 feet; depth to water, 24.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red	7	12
Sand, fine	3	15
Sand, medium to coarse, and gravel; clay streaks	5	20
Clay, brown	4	24
Sand, medium to coarse, and gravel; a few clay streaks	16	40
Sand, coarse, and gravel; a few clay streaks	20	60
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy, brown	33	93
Sand, fine to medium; many clay streaks	7	100
Clay, brown	5	105
Sand, fine to medium; a few clay streaks	5	110
Clay, green	4	114
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	119

28-1W-10ddc.--*Driller's log of test hole no. 27 in SW SE SE sec. 10, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,309.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	15	15
Clay, sandy	5	20
Sand, coarse	3	23
Sand, coarse; with gravel	9	32
Gravel; with sand	34	66
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	15	81
Sand, fine to coarse, and clay streaks	30	111
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	116

28-1W-11aaa.--*Driller's log of test hole no. 815-T-4 in NE NE NE sec. 11, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,288.8 feet; depth to water, 7.6 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	2	4
Sand, medium to coarse, and gravel; clay streaks	6	10
Sand, coarse, and gravel; a few clay streaks	10	20
Clay, gray and brown	6	26
Sand, medium to coarse, and gravel; many clay streaks	9	35
Sand, coarse, and gravel; clay streaks	15	50
Lower Pleistocene Subseries, undifferentiated		
Clay, brown; few sand and gravel streaks	7	57
Sand, fine to coarse, and clay streaks	3	60
Clay, sandy, brown	21	81
Sand, fine to coarse; many clay streaks	4	85
Sand, medium to coarse, and gravel; clay streaks	4	89
Clay, green	4	93
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	98

28-1W-11ccc.--*Driller's log of test hole no. 26 in SW SW SW sec. 11, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,306.9 feet; depth to water, 28.2 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, reddish-brown	8	10
Sand, medium to coarse, and gravel; clay streaks	11	21
Clay, brown and gray	11	32
Sand, medium to coarse, and gravel; a few clay streaks	18	50
Sand, coarse, and gravel	6	56
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy, brown	11	67
Sand, fine to coarse, and clay streaks	4	71

	Thickness, feet	*Depth, feet*
Clay, sandy, brown	3	74
Sand, medium to coarse; a few clay streaks	17	91
Clay, gray	2	93
Sand, medium to coarse, and some medium gravel; a few clay streaks	7	100
Sand, medium to coarse, and gravel; clay streaks	5	105
Clay, brown	1	106
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	-	106

28-1W-11dcc.--*Driller's log of test hole in SW SW SE sec. 11, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,286.6 feet; depth to water, 9.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, gray	5	5
Clay, brown	9	14
Clay, with fine sand	4	18
Sand, fine	14	32
Lower Pleistocene Subseries, undifferentiated		
Sand, coarse, with gravel	33	65
Sand, coarse, with clay balls	39	104
Clay, greenish	2	106
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	111

28-1W-11ddc.--*Driller's log of test hole no. 23 in SW SE SE sec. 11, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,284.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, black, brown and gray	20	20
Sand, coarse; with medium gravel	35	55
Lower Pleistocene Subseries, undifferentiated		
Sand, coarse; with fine gravel	19	74

	Thickness, feet	*Depth, feet*
Sand, with clay balls; clay streak at 74 feet	21	95
Clay, greenish	4	99
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	104

28-1W-12bbc.--*Driller's log of test hole no. 815-T-3 in SW NW NW sec. 12, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,286.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt	2	2
Sand, coarse, with gravel	49	51
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy	6	57
Sand	13	70
Sand, with clay streaks	7	77
Sand, coarse	5	82
Sand, greenish, with brown and blue clay	9	91
Clay, blue	4	95
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	6	101

28-1W-12bcc.--*Driller's log of test hole no. 815-T-2 in SW SW NW sec. 12, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,285.9 feet; depth to water, 6.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine	4	4
Sand, medium to coarse, and gravel	6	10
Sand, coarse, and gravel; clay streaks	7	17
Clay, blue	1	18
Sand, coarse, and gravel; a few clay streaks	37	55
Lower Pleistocene Subseries, undifferentiated		
Sand, medium to coarse, and some gravel; a few clay streaks	10	65

	Thickness, feet	*Depth, feet*
Clay, sandy, brown; a few sand streaks in the lower 5 feet	15	80
Sand, medium to coarse, and gravel; clay streaks	5	85
Clay, green	1	86
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	91

28-1W-12ccc.--*Driller's log of test hole no. 22 in SW SW SW sec. 12, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,286.9 feet; depth to water, 9.4 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	8	10
Clay, brown; red shale	5	15
Clay, gray	4	19
Sand, fine to coarse, and gravel; a few clay streaks	6	25
Sand, medium to coarse, and gravel; a few clay streaks	25	50
Sand, coarse, and gravel; clay streaks	11	61
Lower Pleistocene Subseries, undifferentiated		
Clay, green	5	66
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	71

28-1W-12ddc.--*Driller's log of test hole no. 19 in SW SE SE sec. 12, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,282.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, silty	4	4
Clay, black, with sand streaks	6	10
Sand, fine to coarse, with gravel	42	52
Clay, greenish	3	55

28-1E-7babb.--*Driller's log of Park well in NW NW NE NW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the City of Wichita. Altitude of land surface, 1,283 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy	3	3
Clay, gray	7	10
Sand, fine to coarse, and fine to coarse gravel	35	45
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	3	48

28-1E-7ccc.--*Driller's log of test hole no. 18 in SW SW SW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,282.6 feet; depth to water, 10.6 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	4	7
Sand, fine	3	10
Sand, fine to coarse, and gravel	10	20
Sand, medium to coarse, and gravel	7	27
Clay, blue	2	29
Sand, medium to coarse, and gravel; a few clay streaks	11	40
Sand, medium to coarse, and gravel	10	50
Clay, green	1	51
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	56

28-1E-7cdc.--*Driller's log of test hole no. 17 in SW SE SW sec. 7, T 28 S, R 1 E; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,282.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, silty	8	8

28-1W-14ccd.--*Driller's log of test hole no. 630-23-3 in SE SW SW sec. 14, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,295.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	16	16
Clay, sandy, brown	5	21
Sand and gravel, silty	7	28
Sand, coarse, with gravel	30	58
Sand, with clay streaks	7	65
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy	15	80
Sand	17	97
Clay, greenish	4	101
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	106

28-1W-14ddc.--*Driller's log of test hole in SW SE SE sec. 14, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,284.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay	20	20
Sand, coarse, and gravel	34	54
Gravel, coarse, sandy, with clay	14	68
Clay, greenish	7	75
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	6	81

28-1W-14ddd.--*Driller's log of test hole no. 815-U-1 in SE SE SE sec. 14, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,280.4 feet; depth to water, 9.5 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Clay, brown	16	20
Clay, brown and blue	5	25
Sand, coarse, and gravel; many clay streaks.	15	40

	Thickness, feet	Depth, feet
Sand, coarse, and gravel, a few clay streaks	11	51
Clay, green	3	54
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	59

28-1W-15cbb.--*Driller's log of test hole no. 811-U-3 in NW NW SW sec. 15, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,295.8 feet; depth to water, 17.8 feet.*

	Thickness, feet	Depth, feet
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red	10	13
Sand, medium to coarse, and gravel; clay streaks	2	15
Sand, coarse, and gravel; a few clay streaks	5	20
Clay, brown	13	33
Sand, medium to coarse, and gravel	37	70
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	19	89
Clay, brown; with a few sand streaks	8	97
Sand, fine to coarse; with clay streaks	8	105
Sand, fine to coarse, and gravel; clay streaks	5	110
Clay, brown and green	5	115
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	120

28-1W-15ccb.--*Driller's log of test hole in NW SW SW sec. 15, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,291 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Clay	13	13
Sand, coarse; with some gravel	44	57
Clay, very sandy, greenish	56	113
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	118

28-1W-15ccc.--*Driller's log of test hole no. 811-U-1 in SW SW SW sec. 15, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,311.1 feet; depth to water, 36.9 feet.*

	Thickness, feet	*Depth, feet*
Soil	4	4
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, very sandy, brown	6	10
Sand, fine, silty	5	15
Sand, medium to coarse, and gravel	45	60
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and gravel; a few clay streaks	10	70
Sand, medium to coarse, and gravel	21	91
Clay, brown and blue	9	100
Clay, blue	5	105
Clay, blue and gray; sand streaks	5	110
Sand, fine to coarse; with clay streaks	9	119
Clay, green	1	120
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	125

28-1W-16aaa.--*Driller's log of test hole no. 30 in NE NE NE sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,288.6 feet; depth to water, 9.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	6	9
Clay, blue	3	12
Sand, coarse, and gravel; a few clay streaks	18	30
Sand, medium to coarse, and gravel; a few clay streaks	14	44
Lower Pleistocene Subseries, undifferentiated		
Clay, yellowish-brown	7	51
Sand, fine to coarse	7	58
Clay, sandy, yellowish-brown, and sand and gravel	12	70
Clay, sandy, brown	15	85
Clay, sandy, brown; a few sand streaks	5	90
Sand, fine to coarse; a few clay streaks	5	95
Sand, medium to coarse, and gravel	7	102
Clay, brown	1	103

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	108

28-1W-16aba.--*Driller's log of test hole in NE NW NE sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,287.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, black.....	9	9
Sand and fine gravel; clay streaks in lower 5 feet.....	13	22
Gravel and sand, yellow.....	27	49
Clay.....	5	54
Sand.....	3	57
Clay.....	35	92
Sand, coarse.....	19	111
Clay, brown and green.....	5	116
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	121

28-1W-16abb.--*Driller's log of test hole in NW NW NE sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,295.2 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, black.....	15	15
Sand, coarse, and gravel.....	2	17
Sand, with clay streaks.....	4	21
Sand, coarse, and medium to fine gravel.....	56	77
Clay, sandy.....	21	98
Sand, coarse.....	16	114
Clay, greenish.....	3	117
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	4	121

28-1W-16bab.--*Driller's log of test hole in NW NE NW sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,307.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	8	8
Sand, coarse; with gravel	13	21
Clay, gray	13	34
Sand, coarse; clay streaks at 51 feet and 57 feet, fine gravel in lower 30 feet	47	81
Clay, sandy, black	17	98
Sand, coarse, and fine gravel	43	141
Clay, greenish	4	145
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	150

28-1W-16bcc.--*Driller's log of test hole no. 809-U-3 in SW SW NW sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,307.0 feet; depth to water, 25.8 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	8	10
Clay, red	9	19
Sand, medium to coarse, and gravel	11	30
Sand, coarse, and gravel; a few clay streaks	10	40
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	15	55
Clay, blue	10	65
Clay, brown and blue	5	70
Clay, brown and blue, and sand	9	79
Sand, fine to medium; a few clay streaks	11	90
Sand, fine to coarse; with clay streaks	17	107
Clay, blue and brown	3	110
Sand, fine to coarse, and gravel; a few clay streaks	15	125
PERMIAN		
Lower Permian Series		
Wellington Formation		
Rock	1	126
Shale, blue	5	131

28-1W-16ccb.--*Driller's log of test hole in NW SW SW sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,300.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, sandy	13	13
Sand, coarse; with gravel and clay	26	39
Clay, gray	6	45
Clay, blue	23	68
Sand, fine to medium	6	74
Clay, sandy	16	90
Sand, coarse	8	98
Clay, sandy	12	110
Sand, coarse	10	120
Clay, greenish	3	123
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	128

28-1W-16dcc.--*Driller's log of test hole in SW SW SE sec. 16, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,297.4 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, brown	3	6
Sand, medium to coarse, and gravel; clay streaks, fine sand in lower 5 feet	44	50
Sand, medium to coarse; some gravel in upper 15 feet and lower 20 feet	45	95
Clay, green	2	97
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	5	102

28-1W-17bab.--*Driller's log of test hole no. 37 in NW NE NW sec. 17, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,318.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	15	15
Sand, coarse	15	30
Lower Pleistocene Subseries, undifferentiated		
Clay, gray	29	59

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	32	91

28-1W-21bab.--*Driller's log of test hole no. 630-21-3 in NW NE NW sec. 21, T 28 S, R 1 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,305.6 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay.....	3	3
Sand, medium.....	5	8
Sand, coarse; with gravel.....	40	48
Lower Pleistocene Subseries, undifferentiated		
Clay, sandy, brown.....	17	65
Sand, medium to coarse.....	24	89
Clay, sandy.....	6	95
Sand, medium to coarse.....	6	101
Clay, greenish.....	14	115
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	120

28-1W-22ddb.--*Driller's log of well no. 2 in NW SE SE sec. 22, T 28 S, R 1 W; drilled by Layne-Western Co. for Kansas Gas and Electric Co. Altitude of land surface, 1,289.0 feet; depth to water, 17.2 feet.*

	Thickness, feet	Depth, feet
Soil.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, red.....	4	6
Sand and gravel.....	5	11
Sand, some clay.....	9	20
Clay, red.....	5	25
Clay, gray.....	5	30
Sand and gravel.....	32	62
Lower Pleistocene Subseries, undifferentiated		
Sand and gravel.....	18	80
Clay, yellow.....	3	83
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	5	88

28-1W-23ddd.--*Driller's log of test hole no. C.T.-106 in SE SE SE sec. 23, T 28 S, R 1 W; drilled by Layne-Western Co. for the Kansas Gas and Electric Co. Altitude of land surface, 1,280 feet; depth to water, 14.3 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, brown	12	15
Clay, brown and gray	11	26
Sand, medium to coarse	4	30
Sand, medium to coarse, and gravel	6	36
Clay, brown, hard	3	39
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	11	50

28-1W-27ccc.--*Driller's log of test hole for well no. 2 in SW SW SW sec. 27, T 28 S, R 1 W; drilled by Layne-Western Co. for Frontier Chemical Co. Altitude of land surface, 1,306 feet; depth to water, 30.0 feet.*

	Thickness, feet	*Depth, feet*
Soil	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay, sandy, red	10	15
Clay, sandy, brown; sand and gravel streaks.	5	20
Sand, medium to coarse, and gravel; a few clay streaks	10	30
Clay, brown	15	45
Sand, medium to coarse, and gravel; a few clay streaks	25	70
Lower Pleistocene Subseries, undifferentiated		
Clay, brown	15	85
Sand, fine to coarse; with clay streaks	5	90
Sand, coarse	5	95
Sand, coarse, and medium gravel	10	105
Clay, green	1	106
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue	4	110

28-1W-30aaa.--*Sample log of test hole in NE NE NE sec. 30, T 28 S, R 1 W, on south side of road, 0.1 mile west of north-south road, 40 feet west of 3rd power pole on south side; augered August 1957. Altitude of land surface, 1,317 feet; depth to water, 24.6 feet.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, sandy, grayish-tan.....	3	5
Silt, sandy, light-tan.....	10	15
Silt, very sandy, tan to grayish-tan.....	5	20
Silt, very sandy, tan.....	8	28
Sand, fine to medium, silty.....	2	30
Sand, fine to medium; arkosic with streaks of tan sandy silt.....	5	35
Silt, sandy, tan; some brown clay and sand streaks.....	5	40
Sand, fine to coarse, silty.....	5	45
Sand, fine to coarse, silty; some streaks of tan and dark-gray silt at 55 to 60 feet..	30	75

28-1W-33ada.--*Sample log of well no. 1 in NE SE NE sec. 33, T 28 S, R 1 W; drilled by Layne-Western Co. for Abbott Labs., Inc., July 1959. Altitude of land surface, 1,304.5 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, tan.....	5	5
Silt, sandy, reddish-tan; with streaks of fine to coarse sand in the lower 5 feet..	10	15
Sand, fine to coarse, and fine gravel; arkosic, much quartz; some medium gravel in lower 5 feet.....	15	30
Silt, sandy, tan.....	10	40
Silt, sandy, grayish-brown.....	5	45
Silt, sandy, grayish-brown to light-tan; streaks of sand and fine gravel; arkosic.	5	50
Sand, fine to coarse, and fine to medium gravel; arkosic, streaks of sandy tan silt in the lower 5 feet.....	10	60
Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, tan; many streaks of silty sand and fine to medium gravel.....	5	65
Sand, fine to coarse, and fine gravel; some silt.....	5	70
Sand, fine to coarse, and fine gravel; much quartz.....	10	80
Silt, tan; some sand.....	5	85

28-1W-36bab.--*Driller's log of test hole in NW NE NW sec. 36, T 28 S, R 1 W; drilled by Layne-Western Co. for John Hay. Altitude of land surface, 1,300(T) feet.*

	Thickness, feet	Depth, feet
Soil	1	1
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, sandy, brown	11	12
Sand, fine to coarse; with clay lenses	13	25
Sand, medium to coarse, and gravel; clay lenses	30	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray	-	55

28-1W-36bbb.--*Sample log of test hole in NW NW NW sec. 36, T 28 S, R 1 W, on east side of road, 30 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,297 feet; depth to water, 35.9 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, grayish-tan to tan	5	5
Silt, some sand, tan	10	15
Sand, fine to medium, silty, dark-tan; arkosic, mostly quartz	5	20
Sand, fine to coarse, and fine to medium gravel; arkosic with thin streaks of tan silt	5	25
Sand, fine to coarse, and fine to medium gravel; arkosic with abundant quartz and few thin silt streaks	35	60
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	61

28-2W-1aaa.--*Driller's log of test hole no. 73 in NE NE NE sec. 1, T 28 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,333.6 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Clay	15	15
Clay, sandy, white	7	22
Sand, coarse, with gravel	61	83
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Clay, blue	11	94

	Thickness, feet	*Depth, feet*
Sand, coarse; with clay streaks.....	30	124
Clay, brown.....	14	138
Clay; with sand streaks.....	40	178
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	4	182

28-2W-1bbb.--*Driller's log of test hole no. 74 in NW NW NW sec. 1, T 28 S, R 2 W; drilled by Layne-Western Co. for the U.S. Air Force, July-August 1955. Altitude of land surface, 1,355.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, brown.....	60	60
Clay, greenish.....	10	70
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	7	77

28-2W-9ddd.--*Sample log of test hole in SE SE SE sec. 9, T 28 S, R 2 W, on west side of road, at south end of field gate, 25 feet north of the center line of the east-west road; augered August 1957. Altitude of land surface, 1,386.9 feet; depth to water, 14.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan.....	5	5
Silt, sandy, tan; grades into silty, fine to coarse sand at base.....	5	10
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel, silty, tan; abundant quartz, some arkose; streaks of light-tan clayey silt in lower 5 feet.....	10	20
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	22

28-2W-14aaa.--*Sample log of test hole in NE NE NE sec. 14, T 28 S, R 2 W, on west side of road on field drive, 30 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,348.2 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, tan to grayish-green	5	9
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green, hard	3	12

28-2W-11ccc.--*Sample log of test hole in SW SW SW sec. 11, T 28 S, R 2 W, in ditch on east side of road, just past field drive, 75 feet north of east-west road; augered August 1957. Altitude of land surface, 1,379.7 feet; depth to water, 16.5 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, gray	5	5
Silt, sandy, grayish-tan to tan; sandier at base	5	10
Silt, sandy, tan; caliche pebbles	5	15
Silt, sandy, tan; some fine gravel and caliche pebbles	5	20
Silt, sandy, grayish-tan; some purple clay	6	26
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray	1	27

28-2W-15ccc.--*Sample log of test hole in SW SW SW sec. 15, T 28 S, R 2 W, on east side of road, 30 feet north of center line of east-west road; augered August 1957. Altitude of land surface, 1,378.5 feet; depth to water, 13.2 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan	5	5
Silt, sandy, tan	15	20
Silt, very sandy, tan	5	25
Silt, very sandy, tan; streaks of clayey grayish-brown silt	7	32
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray	1	33

28-2W-17aaa.--*Sample log of test hole in NE NE NE sec. 17, T 28 S, R 2 W, in ditch on west side of road, 80 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,407.3 feet; depth to water, 13.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, dark reddish-brown.....	5	5
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to medium, very silty, grayish-tan.....	5	10
Sand, fine to medium, clean.....	3	13
Sand, fine to coarse, and fine gravel, silty, reddish-brown.....	8	21
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green.....	1	22

28-2W-17bbb.--*Sample log of test hole in NW NW NW sec. 17, T 28 S, R 2 W, in ditch on west side of road, 80 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,426.3 feet; depth to water, 13.2 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark grayish-brown.....	5	5
Silt, sandy, grayish-tan; caliche.....	5	10
Silt, light grayish-tan; some sand and caliche.....	5	15
Silt, sandy, light pinkish-tan; caliche pebbles.....	8	23
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, very silty.....	7	30
Silt, very sandy, light grayish-tan to grayish-tan.....	8	38
Sand, fine to coarse, silty, light-tan; arkosic.....	14	52
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	1	53

28-2W-18bbb.--*Sample log of test hole in NW NW NW sec. 18, T 28 S, R 2 W, on east side of road, 45 feet south of east-west road, 10 feet south of stop sign; augered August 1957. Altitude of land surface, 1,421.9 feet; depth to water, 14.7 feet.*

	Thickness, feet	*Depth, feet*
Road fill	5	5
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, light grayish-tan; some caliche	4	9
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, fine gravel, rusty-tan; arkosic	6	15
Sand, fine to coarse, and fine to medium gravel, silty, tan; arkosic	10	25
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	1	26

28-2W-25ddd.--*Sample log of test hole in SE SE SE sec. 25, T 28 S, R 2 W, on north side of road, 35 feet west of the center line of the north-south road; augered August 1957. Altitude of land surface, 1,339.7 feet; depth to water, 23.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-tan	5	5
Silt, sandy, grayish-tan	5	10
Silt, sandy, reddish-tan	5	15
Silt, sandy, tan	10	25
Silt, very sandy, reddish-tan	5	30
Silt, reddish-tan, and fine to coarse sand	5	35
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, silty; very little pink feldspar; streaks of sandy silt in lower 15 feet	25	60
Sand, and gravel; with silt streaks, poor sample return	15	75

28-2W-33bbb.--*Sample log of test hole in NW NW NW sec. 33, T 28 S, R 2 W, on south side of road, 75 feet east of the center line of the north-south road; augered August 1957. Altitude of land surface, 1,397.8 feet; depth to water, 17.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, gray; some caliche pebbles	5	5
Silt, gray to dark-tan; fine to coarse sand near base	5	10

	Thickness, feet	*Depth, feet*
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine to medium gravel; arkosic with much tan silt.....	7	17
Silt, gray.....	1	18
Sand, fine to coarse, and fine to medium gravel; arkosic with tan silt in upper 2 feet.....	6	24
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green.....	1	25

28-2W-35bbb.--*Sample log of test hole in NW NW NW sec. 35, T 28 S, R 2 W, on south side of road, 100 feet east of north-south road; augered August 1957. Altitude of land surface, 1,372.2 feet; depth to water, 8.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, very sandy, grayish-brown.....	5	5
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse; mostly quartz with some feldspar; tan silt at top.....	5	10
Sand, fine to coarse, and fine gravel, silty; light grayish-tan clay at base.....	4	14
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	1	15

28-3W-4aaa.--*Sample log of test hole in NE NE NE sec. 4, T 28 S, R 3 W, in ditch on south side of road, 40 feet west of north-south road; augered August 1957. Altitude of land surface, 1,438.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, grayish-brown.....	7	7
Silt, very sandy, tan; arkosic.....	3	10
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, mostly fine to medium, tan.....	2	12
Sand, fine to coarse, some fine gravel; arkosic.....	8	20
Sand, fine to coarse, mostly fine to medium; arkosic.....	15	35
Sand, fine to coarse; arkosic.....	5	40

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine gravel; arkosic	4	44
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	45

28-3W-5bba.--*Sample log of test hole in NE NW NW sec. 5, T 28 S, R 3 W, on south side of road, 0.2 mile east of north-south road, 50 feet west of bridge; augered August 1957. Altitude of land surface, 1,420 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Lower Pleistocene Subseries, undifferentiated		
Silt, black	7	10
Silt, gray	8	18
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	19

28-3W-6ccc.--*Sample log of test hole in SW SW SW sec. 6, T 28 S, R 3 W, on east side just north of field drive; augered August 1957. Altitude of land surface, 1,414.5 feet; depth to water, 7.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; silty; arkosic with some caliche pebbles.	4	6
Sand, fine to coarse, silty; arkosic	16	22
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	23

28-3W-7ccc.--*Sample log of test hole in SW SW SW sec. 7, T 28 S, R 3 W, in ditch on east side of road, 20 feet north of east-west road; augered August 1957. Altitude of land surface, 1,416.6 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)

	Thickness, feet	Depth, feet
Silt, sandy, brown	2	2
Silt, very sandy, tan; some fine gravel	4	6
Sand, fine to coarse, very silty, tan	4	10
Silt, sandy, reddish-brown	5	15
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	16

28-3W-9ccc.--*Sample log of test hole in SW SW SW sec. 9, T 28 S, R 3 W, in ditch on east side of road, 30 feet north of the east-west road; augered August 1957. Altitude of land surface, 1,403.5 feet; depth to water, 14.2 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Sand, fine to coarse, and fine gravel in clay, reddish-tan silt	4	4
Lower Pleistocene Subseries, undifferentiated		
Silt, sandy, clayey, yellowish-tan	1	5
Sand, fine to coarse, silty, tan	10	15
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	16

28-3W-9ddd.--*Sample log of test hole in SE SE SE sec. 9, T 28 S, R 3 W, in ditch on north side of road, 250 feet west of north-south road; augered August 1957. Altitude of land surface, 1,377.7 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Lower Pleistocene Subseries		
Silt, red	2	2
Silt, light-tan	2	4
Silt, sandy, reddish-brown	2	6
Silt, very sandy, reddish-brown	2	8
Sand, silty	2	10
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	11

28-3W-13bbb.--*Sample log of test hole in NW NW NW sec. 13, T 28 S, R 3 W, in ditch on east side of road, 100 feet south of east-west road; augered August 1957. Altitude of land surface, 1,416.4 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, very sandy, reddish-tan.....	5	5
Silt, clayey, tan to grayish-tan; some fine gravel.....	2	7
Silt, very clayey, dark-tan; much sand and fine gravel.....	5	12
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, grayish-white; mostly quartz with some arkose.....	4	16
Silt, sandy, light-gray to grayish-tan.....	6	22
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	23

28-3W-15abb.--*Sample log of test hole in NW NW NE sec. 15, T 28 S, R 3 W, in ditch on west side of road into Lake Afton, 20 feet south of blacktop road; augered August 1957. Altitude of land surface, 1,384.8 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Silt, red.....	1	1
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	2

28-3W-18aaa.--*Sample log of test hole in NE NE NE sec. 18, T 28 S, R 3 W, in ditch on south side of road, 35 feet south of the center line of the east-west road; augered August 1957. Altitude of land surface, 1,436.5 feet; depth to water, 26.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, very sandy, dark-tan.....	2	2
Silt, sandy, dark-tan; some fine gravel.....	5	7
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, silty, dark-tan; arkosic; fine to medium gravel in lower 7 feet.....	15	22

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine to medium gravel; arkosic	12	34
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	35

28-3W-22ddd.--*Driller's log of test hole in SE SE SE sec. 22, T 28 S, R 3 W; augered August 1958. Altitude of land surface, 1,375.5 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Silt, brown	1	1
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	2

28-3W-24ddd.--*Sample log of test hole in SE SE SE sec. 24, T 28 S, R 3 W, on west side of road, 15 feet north of the east-west road; augered August 1957. Altitude of land surface, 1,412.9 feet; depth to water, 24.6 feet.*

	Thickness, feet	Depth, feet
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, sandy, reddish-tan	4	7
Sand, fine to coarse, silty	2	9
Lower Pleistocene Subseries, undifferentiated		
Silt, very sandy, light grayish-tan	6	15
Sand, fine to coarse, and fine gravel, very silty; arkosic with weathered feldspar	22	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	-	37

28-3W-35ccc.--*Sample log of test hole in SW SW SW sec. 35, T 28 S, R 3 W, on north side of road, 10 feet east of north-south road; augered August 1957. Altitude of land surface, 1,330.5 feet; depth to water, 32.10 feet.*

	Thickness, feet	Depth, feet
Road fill	2	2

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, very sandy, dark reddish-tan.....	5	7
Sand, fine to coarse, very silty, reddish-brown; some fine gravel.....	3	10
Illinoisan Stage (terrace deposits)		
Sand, fine to coarse, tan; mostly quartz with abundant white feldspar; some fine gravel in lower 2 feet.....	10	20
Sand, fine to coarse, and fine to coarse gravel; arkosic with abundant quartz.....	10	30
Sand, fine to coarse, tan; arkosic with red and green shale fragments in lower 2 feet.....	7	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	38

28-4W-9ccc.--*Sample log of test hole in SW SW SW sec. 9, T 28 S, R 4 W, in ditch 30 feet east of center line of north-south road, 24 feet north of center line of east-west road; augered August 1957. Altitude of land surface, 1,380.2 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, reddish-brown.....	5	5
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, green.....	3	8

28-4W-9ddd.--*Sample log of test hole in SE SE SE sec. 9, T 28 S, R 4 W, in ditch on west side of road, 72 feet north of center line of McArthur Road; augered August 1957. Altitude of land surface, 1,340.4 feet; depth to water, 7.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, brown.....	5	5
Silt, tan, sandy.....	7	12
PERMIAN		

	Thickness, feet	Depth, feet
Lower Permian Series		
Ninnescah Shale		
Shale, red and green.....	1	13

28-4W-14ccc.--*Sample log of test hole in SW SW SW sec. 14, T 28 S, R 4 W, on east side of road, 15 feet west and 10 feet north of telephone pole on corner; augered August 1957. Altitude of land surface, 1,329.4 feet; depth to water, 6.5 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, brown.....	5	5
Sand, fine, very silty, grayish-brown; shale fragments.....	2	7
Sand, fine to medium, silty, tan.....	3	10
Sand, fine to coarse; arkosic, clean.....	10	20
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	21

28-4W-15aaa.--*Sample log of test hole in NE NE NE sec. 15, T 28 S, R 4 W, on road corner; augered August 1957. Altitude of land surface, 1,336.1 feet; depth to water, 9.3 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (terrace deposits and alluvium)		
Silt, black.....	5	5
Sand, silty, tan.....	10	15
Silt, gray.....	35	50
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale.....	1	51

28-4W-18aaa.--*Sample log of test hole in NE NE NE sec. 18, T 28 S, R 4 W, on south side of road, 20 feet west of north-south road; augered August 1957. Altitude of land surface, 1,380.1 feet; depth to water, 8.5 feet.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)

	Thickness, feet	Depth, feet
Silt, sandy, reddish-tan.....	5	5
Sand, fine to coarse, and fine gravel; some reddish-tan silt.....	5	10
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	11

28-4W-18bbb.--*Sample log of test hole in NW NW NW sec. 18, T 28 S, R 4 W, in ditch on south side of road, 10 feet west of county-line sign; augered August 1957. Altitude of land surface, 1,389.4 feet; depth to water, 8.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, very sandy, reddish-tan.....	7	7
Sand, fine to coarse, and fine gravel, silty, reddish-tan; arkosic.....	6	13
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	14

28-4W-22ccc.--*Sample log of test hole in SW SW SW sec. 22, T 28 S, R 4 W; augered August 1957. Altitude of land surface, 1,337.0 feet; depth to water, 2.5 feet.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse, very silty, tan and reddish-tan.....	25	27
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	28

28-4W-29ddd.--*Sample log of test hole in SE SE SE sec. 29, T 28 S, R 4 W, on north side of east-west road; augered August 1957. Altitude of land surface, 1,351.5 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, brown	4	4
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	5

29-2E-13ccc.--*Sample log of test hole in SW SW SW sec. 13, T 29 S, R 2 E, on east side of road; augered July 1957. Altitude of land surface, 1,341 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Clay, tan	9	11
Clay, grayish-green	9	20
Clay, yellowish-brown	8	28
Clay, greenish-tan	10	38

29-2E-18ddd.--*Sample log of test hole in SE SE SE sec. 18, T 29 S, R 2 E, on north side of road, 100 feet west of center line of north-south road; augered August 1957. Altitude of land surface, 1,291 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, reddish-brown	10	10
Silt, sandy, brown	5	15
Silt, brown; sandy at base	5	20
Sand, fine, very silty	5	25
Sand, fine, silty	5	30
Sand, fine, tan	11	41
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray	1	42

29-2E-21bbb.--*Sample log of test hole in NW NW NW sec. 21, T 29 S, R 2 E, on east side of road, 40 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,333.0 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess)

	Thickness, feet	*Depth, feet*
Silt, sandy, dark-tan; carbonaceous specks..	7	7
Silt, sandy, gray to white; sand is quartz with some quartzite; some caliche.....	3	10
Pliocene(?) Series and Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, white; quartzose with abundant caliche; some arkose in lower 4 feet.....	9	19
Silt, sandy, tan, and weathered shale.....	8	27
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green.....	1	28

29-2E-22bbb.--*Sample log of test hole in NW NW NW sec. 22, T 29 S, R 2 E, on south side of road, 80 feet east of center line of the north-south road; augered August 1957. Altitude of land surface, 1,309.0 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill.....	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, tan; some sand.....	7	10
Silt, tan; red siltstone fragments; some sand in lower 5 feet.....	10	20
Silt, grayish-tan and gray; some sand.....	5	25
Silt, sandy, light grayish-tan.....	5	30
Silt, light grayish-tan.....	5	35
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green.....	1	36

29-2E-31ddd.--*Sample log of test hole in SE SE SE sec. 31, T 29 S, R 2 E; drilled 1944. Altitude of land surface, 1,240 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown.....	8	8
Sand, fine to coarse, and fine gravel.....	2	10
Sand, fine to coarse, and fine to medium gravel; arkosic.....	8	18
PERMIAN		
Lower Permian Series		

	Thickness, feet	*Depth, feet*
Wellington Formation		
Shale, grayish-green.....	2	20

29-1E-3baa.--*Sample log of test hole in NE NE NW sec. 3, T 29 S, R 1 E, in ditch on west side of road, at start of turn to west; augered August 1957. Altitude of land surface, 1,255.6 feet; depth to water, 7.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to medium; arkosic.....	5	5
Sand, fine to coarse, most fine to medium; arkosic, with some fine gravel in lower 5 feet.....	10	15
Sand, fine to coarse, and fine gravel; arkosic with streaks of dark-gray silt...	5	20
Sand, fine to coarse, and fine to medium gravel; arkosic; some coarse gravel in lower 4 feet.....	14	34
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	35

29-1E-4baa.--*Sample log of test hole in NE NE NW sec. 4, T 29 S, R 1 E; drilled 1944. Altitude of land surface, 1,258.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, dark-gray.....	1	1
Silt, sandy, tannish-gray.....	3	4
Silt, sandy, grayish-tan; some gray clay in lower 2 feet.....	7	11
Sand, fine to coarse, and fine to coarse gravel; arkosic, streaks of sandy tan silt in lower 10 feet.....	39	50
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	5	55

29-1E-4bcc.--*Sample log of test hole in SW SW NW sec. 4, T 29 S, R 1 E; drilled 1944. Altitude of land surface, 1,256.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse, and fine to medium gravel; arkosic with abundant quartz; fine to coarse gravel in lower 31 feet...	51	51
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	4	55

29-1E-8cbb.--*Sample log of test hole in NW NW SW sec. 8, T 29 S, R 1 E; drilled 1944. Altitude of land surface, 1,265.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark grayish-brown.....	1	1
Silt, sandy, tannish-gray.....	5	6
Silt, sandy, reddish-tan.....	12	18
Silt, sandy, tannish-gray; snails.....	5	23
Sand, fine to coarse, and fine to medium gravel; arkosic with some tan silt.....	7	30
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	31

29-1E-10add.--*Driller's log of test hole in SE SE NE sec. 10, T 29 S, R 1 E; drilled by Layne-Western Co. for the El Paso Water Co., July 1959. Altitude of land surface, 1,249(T) feet; depth to water, 11.2 feet.*

	Thickness, feet	*Depth, feet*
Soil.....	3	3
NEOGENE		
Pleistocene Series, undifferentiated		
Clay, sandy, brown.....	6	9
Sand, fine to coarse.....	6	15
Sand, fine to coarse, and gravel.....	34	49
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	-	49

29-1E-13dba.--*Sample log of test hole in NE NW SE sec. 13, T 29 S, R 1 E, on south side of road, 30 feet west and 10 feet south of bridge; augered August 1957. Altitude of land surface, 1,241.2 feet; depth to water 14.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, dark grayish-brown.....	5	5
Silt, sandy, light grayish-brown.....	5	10
Silt, sandy, gray; snail fragments.....	15	25
Silt, sandy, light-gray.....	4	29
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	-	29

29-1E-14ccc.--*Sample log of test hole in SW SW SW sec. 14, T 29 S, R 1 E, on north side of road, 40 feet east of the north-south road, 15 feet east of stop sign; augered August 1957. Altitude of land surface, 1,242.0 feet; depth to water, 8.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, grayish-brown; abundant fine to coarse sand.....	5	5
Silt, tan; much fine sand at base.....	10	15
Sand, fine to coarse, and fine gravel, silty; arkosic.....	5	20
Sand, fine to coarse, and fine gravel; arkosic, fine to medium gravel in lower 10 feet.....	15	35
Sand, fine to coarse, and fine to coarse gravel; gravel is predominantly fine to medium.....	20	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	56

29-1E-14cdd.--*Sample log of test hole in SE SE SW sec. 14, T 29 S, R 1 E, in ditch on west side of road, 100 feet north of T-road to east; drilled August 1957. Altitude of land surface, 1,241.0 feet; depth to water, 5.8 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	Depth, feet
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to coarse, silty, dark-tan; predominantly fine to medium sand.....	5	5
Sand, fine to coarse; predominantly fine to medium.....	5	10
Sand, fine to coarse, and fine gravel; arkosic with some dark-gray silt.....	10	20
Sand, fine to coarse, and some fine gravel; arkosic with thin streaks of gray silt...	5	25
Sand, fine to coarse, and fine gravel; arkosic; thin streaks of gray silt in the lower 8 feet.....	28	53
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	-	53

29-1E-14dcc.--*Driller's log of test hole in SW SW SE sec. 14, T 29 S, R 1 E; drilled by Layne-Western Co. for the El Paso Water Co., July 1959. Altitude of land surface, 1,236(T) feet; depth to water, 9.6 feet.*

	Thickness, feet	Depth, feet
Soil.....	3	3
NEOGENE		
Pleistocene Series, undifferentiated		
Sand, fine to coarse, and gravel.....	32	35
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	3	38

29-1E-15ccc.--*Sample log of test hole in SW SW SW sec. 15, T 29 S, R 1 E, on east side of road, 150 feet north of east-west road; augered August 1957. Altitude of land surface, 1,242.0 feet; depth to water, 7.4 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine, very silty, tan.....	5	5
Silt, light grayish-tan; some sand.....	5	10
Sand, fine to coarse, silty, gray; arkosic..	10	20
Sand, fine to coarse, and fine to medium gravel; arkosic, abundant quartz and some gray silt.....	5	25

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine to medium gravel; arkosic, with some coarse gravel and caliche pebbles in lower 22 feet.....	27	52
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	54

29-1E-17bbb.--*Sample log of test hole in NW NW NW sec. 17, T 29 S, R 1 E, on road, 20 feet south of center line of east-west road; augered July 1957. Altitude of land surface, 1,274.6 feet.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, red.....	13	15
Silt, reddish-brown.....	15	30
Sand, fine, silty.....	5	35
Sand, fine.....	10	45
Sand, fine to coarse; some gravel.....	5	50
Sand, fine to coarse.....	20	70
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, blue.....	-	70

29-1E-19bbb.--*Sample log of test hole in NW NW NW sec. 19, T 29 S, R 1 E, in ditch on east side of road, 35 feet south of the center line of the east-west road; augered August 1957. Altitude of land surface, 1,279.0 feet; depth to water, 35.1 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, reddish-brown.....	5	5
Silt, sandy, tan.....	9	14
Sand, fine to coarse, and fine to medium gravel, very silty, dark-tan.....	6	20
Sand, fine to coarse, and fine gravel, silty; arkosic.....	5	25
Sand, fine to coarse, and fine to medium gravel; arkosic with streaks of dark-tan silt.....	5	30
Sand, fine to coarse, and fine gravel; thin streaks of clayey tan silt with caliche..	5	35
Sand, fine to coarse, and fine gravel; arkosic, streaks of clayey grayish-tan silt in lower 5 feet.....	20	55

	Thickness, feet	Depth, feet
Sand, fine to coarse, and fine gravel; arkosic, with grayish-tan clayey silt streak at 59 feet	5	60
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	61

29-1E-21bbb.--*Sample log of test hole in NW NW NW sec. 21, T 29 S, R 1 E, in ditch on south side of road, 100 feet east of bridge; augered August 1957. Altitude of land surface, 1,245.0 feet; depth to water, 6.6 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Sand, fine to medium, tan; arkosic; with much angular quartz and dark minerals in the lower 5 feet	10	10
Sand, fine to coarse; some gray silt, sand is predominantly quartz with some angular grains, some arkose; fine arkosic gravel in lower 10 feet	15	25
Sand, fine to coarse, and fine to medium gravel; some silt, predominantly quartz, some arkose	22	47
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	48

29-1W-8bbb.--*Sample log of test hole in NW NW NW sec. 8, T 29 S, R 1 W, on south side of road, 25 feet east of the center line of the north-south road; augered August 1957. Altitude of land surface, 1,316.0 feet; depth to water, 17.7 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-tan	5	5
Silt, tan; contains sand and fine gravel; clayey in lower 5 feet	10	15
Sand, fine to coarse; arkosic; silty at top, clean towards the base	5	20
Sand, fine to coarse, and fine gravel, silty; arkosic	13	33
PERMIAN		
Lower Permian Series		

	Thickness, feet	*Depth, feet*
Wellington Formation		
Shale, light-gray.....	1	34

29-1W-13ccc.--*Sample log of test hole in SW SW SW sec. 13, T 29 S, R 1 W, on north side of road, 50 feet east of the center line of the north-south road; augered August 1957. Altitude of land surface, 1,279.0 feet; depth to water, 27.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark-tan.....	2	2
Silt, sandy, tan.....	3	5
Silt, very sandy, tan.....	5	10
Sand, fine to coarse, and fine gravel; arkosic, much tan silt.....	10	20
Sand, fine to coarse; arkosic, some grayish-tan silt streaks at top.....	5	25
Sand, fine to coarse; some fine gravel, with streaks of tan to grayish-tan silt, sandy in lower 5 feet.....	15	40
Sand, fine to coarse, and fine gravel; arkosic.....	22	62
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	63

29-1W-17ccc.--*Sample log of test hole in SW SW SW sec. 17, T 29 S, R 1 W, on north side of road, 150 feet east of the north-south road; augered August 1957. Altitude of land surface, 1,281.0 feet; depth to water, 15.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, tan.....	5	5
Silt, sandy, pinkish-tan to grayish-tan.....	5	10
Silt, sandy, pinkish-tan.....	5	15
Sand, fine to coarse, very silty; thin streaks of tan silt, and some shale fragments.....	5	20
Silt, sandy, gray.....	3	23
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	24

29-1W-17ddd.--*Sample log of test hole in SE SE SE sec. 17, T 29 S, R 1 W, in ditch on west side of road, 150 feet north of east-west road; augered August 1957. Altitude of land surface, 1,299.5 feet; depth to water, 27.4 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, dark reddish-tan; caliche pebbles in the lower 2 feet	7	7
Sand, fine to coarse, and fine gravel, silty, reddish-tan	3	10
Sand, fine to coarse, and fine gravel; arkosic, some tan clayey silt	10	20
Sand, fine to coarse, silty; thin streaks of tan sandy silt	5	25
Silt, clayey, gray	2	27
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	28

29-1W-21aaa.--*Sample log of test hole in NE NE NE sec. 21, T 29 S, R 1 W, on south side of road by trees, 150 feet west of the north-south road; augered August 1957. Altitude of land surface, 1,265.4 feet; depth to water, 14.8 feet.*

	Thickness, feet	*Depth, feet*
Road fill	5	5
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, tan	5	10
Silt, dark-gray to grayish-tan	5	15
Silt, sandy, tan to pinkish-tan; some caliche pebbles	5	20
Silt, sandy, pinkish-tan; caliche pebbles; some coarse sand in lower 5 feet	10	30
Silt, sandy, clayey, light grayish-tan; much caliche	2	32
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	33

29-1W-22aaa.--*Sample log of test hole in NE NE NE sec. 22, T 29 S, R 1 W, on south side of road, 8 feet from fence and 80 feet west of north-south road; augered August 1957. Altitude of land surface, 1,287.0 feet; depth to water, 33.7 feet.*

	Thickness, feet	*Depth, feet*
Soil, dark-gray.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, grayish-brown.....	3	5
Silt, sandy, dark-tan.....	5	10
Silt, sandy, tan.....	5	15
Silt, slightly sandy, clayey, grayish-tan...	5	20
Sand, fine to medium; arkosic, some very sandy tan silt.....	5	25
Sand, fine to coarse, and fine gravel; arkosic.....	5	30
Sand, fine to coarse, some fine gravel; arkosic; streaks of sandy tan silt.....	5	35
Sand, fine to coarse; arkosic, much fine to medium sand.....	15	50
Sand, fine to coarse; arkosic, some fine gravel.....	5	55
Sand, fine to coarse, and fine gravel; arkosic.....	7	62
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray.....	2	64

29-1W-31bbb.--*Sample log of test hole in NW NW NW sec. 31, T 29 S, R 1 W, on south side of road, under elm tree, about 100 feet east of the north-south road; augered August 1957. Altitude of land surface, 1,242.5 feet; depth to water, 8.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, tannish-gray.....	5	5
Silt, very sandy, tan.....	5	10
Sand, fine to medium, very silty, tan.....	5	15
Sand, fine to coarse, mostly fine to medium, silty, tan; many shale fragments; streak of dark-gray silt with snail shells at 28 feet.....	17	32
Silt, sandy, gray.....	1	33
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	34

29-1W-33aaa.--*Sample log of test hole in NE NE NE sec. 33, T 29 S, R 1 W; drilled 1944. Altitude of land surface, 1,258.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, grayish-tan.....	7	7
Silt, sandy, reddish-tan; some fine gravel..	4	11
Sand, fine to coarse, and fine to medium gravel; arkosic with streaks of clayey, reddish-brown and gray silt; fine to coarse gravel in lower 10 feet.....	19	30
Sand, fine to coarse, and fine to medium gravel; arkosic.....	10	40
Sand, fine to coarse, and fine gravel; arkosic.....	4	44
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	4	48

29-1W-33bbb.--*Sample log of test hole in NW NW NW sec. 33, T 29 S, R 1 W, on south side of road, 75 feet east of the north-south road; augered August 1957. Altitude of land surface, 1,247.2 feet; depth to water, 7.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, dark grayish-brown.....	5	5
Silt, dark-tan; some sand and caliche.....	5	10
Silt, reddish-tan; some sand, caliche and snail fragments.....	5	15
Silt, reddish-tan; very sandy with snail fragments in lower 9 feet.....	14	29
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, dark-gray.....	1	30

29-1W-33ccc.--*Sample log of test hole in SE SE SE sec. 33, T 29 S, R 1 W; drilled 1944. Altitude of land surface, 1,249.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, reddish-tan.....	10	10

	Thickness, feet	*Depth, feet*
Sand, fine to coarse, and fine gravel; arkosic	4	44
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	45

28-3W-5bba.--*Sample log of test hole in NE NW NW sec. 5, T 28 S, R 3 W, on south side of road, 0.2 mile east of north-south road, 50 feet west of bridge; augered August 1957. Altitude of land surface, 1,420 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Lower Pleistocene Subseries, undifferentiated		
Silt, black	7	10
Silt, gray	8	18
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	19

28-3W-6ccc.--*Sample log of test hole in SW SW SW sec. 6, T 28 S, R 3 W, on east side just north of field drive; augered August 1957. Altitude of land surface, 1,414.5 feet; depth to water, 7.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Lower Pleistocene Subseries, undifferentiated		
Sand, fine to coarse, and fine gravel; silty; arkosic with some caliche pebbles.	4	6
Sand, fine to coarse, silty; arkosic	16	22
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	23

28-3W-7ccc.--*Sample log of test hole in SW SW SW sec. 7, T 28 S, R 3 W, in ditch on east side of road, 20 feet north of east-west road; augered August 1957. Altitude of land surface, 1,416.6 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)

	Thickness, feet	*Depth, feet*
Silt, sandy, tan	14	24
Silt, sandy, tan, and silty gray to brown clay	8	32
Sand, fine to coarse, and fine gravel; arkosic	5	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray	3	40

29-1W-34aaa.--*Sample log of test hole in NE NE NE sec. 34, T 29 S, R 1 W, on south side of road, about 75 feet west of the north-south road; augered August 1957. Altitude of land surface, 1,248.4 feet; depth to water, 8.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, grayish-brown	5	5
Silt, dark to light-gray; some sand	5	10
Silt, light-gray; some sand	10	20
Silt, very sandy, medium gray; with some fine gravel in lower 7 feet	17	37
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, dark-gray	1	38

29-1W-36aaa.--*Sample log of test hole in NE NE NE sec. 36, T 29 S, R 1 W, on west side of road, between second and third telephone poles, 150 feet south of the east-west road; augered August 1957. Altitude of land surface, 1,275.1 feet; depth to water, 31.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, sandy, dark-tan	5	5
Silt, sandy, tan	7	12
Sand, fine, silty, tan	3	15
Sand, fine to coarse, mostly fine to medium; arkosic and quartzose with streaks of light- to dark-tan, sandy silt	5	20
Sand, fine to coarse, mostly fine to medium; arkosic and quartzose	5	25
Sand, fine to coarse, and fine to medium, grayish-tan; arkosic	5	30

	Thickness, feet	*Depth, feet*
Sand, fine to coarse; some fine gravel; arkosic with thin streaks of tan silt.....	5	35
Sand, fine to coarse; streaks of tan sandy silt.....	5	40
Sand, fine to coarse, mostly fine to medium; streaks of tan clayey silt with carbonaceous specks.....	5	45
Sand, fine to coarse, mostly fine to medium, silty.....	10	55
Sand, fine to coarse, and fine gravel; arkosic.....	10	65
Sand, fine to coarse, and fine to medium; arkosic.....	10	75

29-2W-1ccc.--*Sample log of test hole in SW SW SW sec. 1, T 29 S, R 2 W, on north side of road, 35 feet east of the stop sign; augered August 1957. Altitude of land surface, 1,348.5 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, very sandy, dark-tan.....	5	5
Silt, very sandy, fine gravel, clayey, tan in upper part to grayish-green and tan in lower part.....	5	10
Silt, slightly sandy, clayey, grayish-green to reddish-brown; some caliche.....	7	17
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	18

29-2W-7aaa.--*Sample log of test hole in NE NE NE sec. 7, T 29 S, R 2 W, on south side of road, 40 feet west of the north-south road; augered August 1957. Altitude of land surface, 1,337.3 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, tan; some caliche.....	5	5
Silt, sandy, tan at top to gray and clayey at base.....	5	10
Silt, sandy, clayey, gray to tan; some caliche.....	7	17
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Wellington Formation		
Shale, gray, hard.....	1	18

29-2W-9aaa.--*Sample log of test hole in NE NE NE sec. 9, T 29 S, R 2 W, on south side of road, 40 feet west of the center line of the north-south road; augered August 1957. Altitude of land surface, 1,354.9 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, tan; some sand.....	5	5
Silt, clayey, tan.....	5	10
Silt, very sandy, tan.....	3	13
Silt, light grayish-tan; some sand, a hard cemented zone 4 inches thick at 13 feet..	6	19
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	1	20

29-2W-15daa.--*Sample log of test hole in NE NE SE sec. 15, T 29 S, R 2 W, on west side of road, at north edge of field drive; augered September 1958. Altitude of land surface, 1,301.1 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, sandy, clayey, dark-tan.....	5	5
Silt, sandy, tan; some caliche.....	5	10
Silt, sandy, clayey, tan.....	5	15
Silt, sandy, tan to grayish-tan.....	5	20
Silt, sandy, pinkish-tan.....	7	27
Sand, fine to coarse, silty, grayish-tan....	4	31
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	32

29-2W-17ddd.--*Sample log of test hole in SE SE SE sec. 17, T 29 S, R 2 W, in ditch on west side of road, 40 feet north of the center line of the east-west road; augered July 1957. Altitude of land surface, 1,287.3 feet; depth to water, 9.2 feet.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Illinoisan Stage (terrace deposits)		
Silt, sandy, tan	3	3
Sand, fine to very coarse, tan	2	5
Sand, fine to coarse, and fine gravel, very silty, tan; arkosic	14	19
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, red	1	20

29-2W-18ddd.--*Sample log of test hole in SE SE SE sec. 18, T 29 S, R 2 W, on west side of road, 50 feet north of east-west road; augered July 1957. Altitude of land surface, 1,287.6 feet; depth to water, 6.9 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, dark-gray	7	10
Silt, sandy, gray	7	17
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, green	1	18

29-2W-19bbb.--*Sample log of test hole in NW NW NW sec. 19, T 29 S, R 2 W, in ditch on south side of road, 40 feet east of the center line of the north-south road; augered July 1957. Altitude of land surface, 1,292.4 feet; depth to water, 5.8 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, very sandy, brown	5	5
Silt, very sandy, grayish-brown	5	10
Silt, very sandy, grayish-brown; sand is arkosic; some caliche pebbles	5	15
Silt, sandy, grayish-tan	7	22
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	23

29-2W-22bbb.--*Sample log of test hole in NW NW NW sec. 22, T 29 S, R 2 W, in ditch on east side of road, 150 feet south of the east-west road, by end of hedgerow; augered July 1957. Altitude of land surface, 1,294.0 feet; depth to water, 25.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, sandy, clayey, grayish-tan.....	5	5
Silt, very sandy, reddish-tan.....	10	15
Sand, fine to coarse, much fine to medium, very silty, reddish-tan; many fragments of red shale.....	10	25
Sand, fine to coarse, and fine gravel; much tan silt.....	5	30
Sand, fine to coarse, and much fine gravel, silty, tan; arkosic, with green shale fragments in the lower 13 feet.....	23	53
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	54

29-2W-23bbb.--*Sample log of test hole in NW NW NW sec. 23, T 29 S, R 2 W, in ditch on east side of road, 150 feet south of east-west road; augered July 1957. Altitude of land surface, 1,279.1 feet; depth to water, 14.6 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Sand, fine to coarse, very silty, reddish-brown to tan.....	10	10
Sand, fine to coarse, much fine to medium; some tan silt.....	5	15
Sand, fine to coarse, and fine gravel, silty, tan; arkosic.....	15	30
Sand, fine to coarse, and fine gravel; arkosic.....	15	45
Sand, fine to coarse; arkosic.....	5	50
Sand, fine to coarse; many fragments of red shale.....	6	56
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, green.....	1	57

29-2W-23bcc.--*Sample log of test hole in SW SW NW sec. 23, T 29 S, R 2 W, on east side of road, 40 feet north of drive into oil well; augered September 1958. Altitude of land surface, 1,275.1 feet; depth to water, 12.9 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, dark-brown.....	2	2
Sand, fine to coarse; 99 percent quartz, silty in upper part.....	8	10
Sand, fine to coarse, and fine gravel, silty, brown to tan; quartzose.....	5	15
Sand, fine to coarse; 95 percent quartz.....	5	20
Sand, fine to coarse, and fine gravel; gravel is arkosic.....	35	55
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	2	57

29-2W-24bbb.--*Sample log of test hole in NW NW NW sec. 24, T 29 S, R 2 W, on south side of road, 200 feet east of the north-south road; augered August 1957. Altitude of land surface, 1,301.8 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, dark-tan.....	3	5
Silt, sandy, reddish-tan.....	15	20
Silt, grayish-tan; some sand.....	5	25
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, light-gray.....	2	27

29-2W-26bbb.--*Sample log of test hole in NW NW NW sec. 26, T 29 S, R 2 W, on east side of road, 75 feet south of the center line of the east-west road; augered September 1958. Altitude of land surface, 1,268.8 feet; depth to water, 12.0 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, reddish-tan; some sand.....	10	10
Silt, sandy, tan.....	15	25
Sand, fine to coarse, and fine gravel.....	12	37

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, bluish-gray.....	-	37

29-2W-26cbb.--*Sample log of test hole in NW NW SW sec. 26, T 29 S, R 2 W, on east side of road, 120 feet north of railroad crossing; drilled September 1958. Altitude of land surface, 1,263.5 feet; depth to water, 18.8 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, reddish-brown.....	7	7
Sand, fine to medium, very silty, reddish-brown.....	8	15
Sand, fine to coarse, and fine gravel; some shale fragments; silt streaks from 35 to 45 feet and from 47 to 48 feet.....	39	54
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	55

29-2W-27ddd.--*Sample log of test hole in SE SE SE sec. 27, T 29 S, R 2 W, in borrow pit on west side of road, 100 feet north of bridge; augered September 1958. Altitude of land surface, 1,258.6 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, tan; some fine sand; sand at base.....	20	20
Sand, fine, very silty, tan; many red shale fragments; grayish-tan in the lower 5 feet.....	15	35
Sand, fine to coarse, silty, grayish-tan....	10	45
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray.....	1	46

29-2W-35cbb.--*Sample log of test hole in NW NW SW sec. 35, T 29 S, R 2 W, on road shoulder at north edge of field drive, 4 feet south of half-section fence; augered September 1958. Altitude of land surface, 1,261.8 feet.*

	Thickness, feet	*Depth, feet*
Road fill	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, tan	11	15
Silt, sandy, tan; very sandy in lower 10 feet	20	35
Sand, fine to coarse, and fine gravel, silty, tan	13	48
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	49

29-3W-1aaa.--*Sample log of test hole in NE NE NE sec. 1, T 29 S, R 3 W; augered August 1957. Altitude of land surface, 1,356.5 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Soil	5	5
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, green	2	7

29-3W-14cdd.--*Sample log of test hole in SE SE SW sec. 14, T 29 S, R 3 W, on north side of road, 60 feet west of half-section road to south; augered July 1957. Altitude of land surface, 1,288.1 feet; depth to water, 7.7 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, reddish-tan	8	10
Silt, dark-tan	5	15
Silt, sandy, tan; sandier in the lower 9 feet	29	44
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, gray	1	45

29-3W-16aaa.--*Sample log of test hole in NE NE NE sec. 16, T 29 S, R 3 W, on south side of road, 50 feet west of north-south road; augered August 1957. Altitude of land surface, 1,304.1 feet; depth to water, 22.6 feet.*

	Thickness, feet	*Depth, feet*
Road fill	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, very sandy, reddish-tan	10	14
Sand, fine to coarse, silty, reddish-tan to tan in lower 7 feet; fine gravel in lower 11 feet	13	27
Silt, sandy, tan	3	30
Sand, fine to coarse, and fine gravel; some tan silt	10	40
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, red	1	41

29-3W-16ddd.--*Sample log of test hole in SE SE SE sec. 16, T 29 S, R 3 W, on east side of field drive, 40 feet west of blacktop road on north side; augered July 1957. Altitude of land surface, 1,313.3 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	4	4
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, reddish-brown and red	7	11
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, red and green	1	12

29-3W-17ddd.--*Sample log of test hole in SE SE SE sec. 17, T 29 S, R 3 W, in ditch on west side of road, 150 feet north of east-west road; augered July 1957. Altitude of land surface, 1,330.1 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, reddish-brown	5	5
Silt, grayish-brown	7	12

	Thickness, feet	Depth, feet
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red and green.....	1	13

29-3W-19aaa.--*Sample log of test hole in NE NE NE sec. 19, T 29 S, R 3 W, on south side of road, 100 feet west of the north-south road; augered July 1957. Altitude of land surface, 1,335.0 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill.....	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, grayish-brown.....	6	7
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	3	10

29-3W-19bbb.--*Sample log of test hole in NW NW NW sec. 19, T 29 S, R 3 W, on south side of road, 75 feet west of north-south road; augered July 1957. Altitude of land surface, 1,340.5 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, tannish-brown.....	5	5
Silt, dark reddish-brown.....	3	8
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale.....	2	10

29-3W-22aaa.--*Sample log of test hole in NE NE NE sec. 22, T 29 S, R 3 W, on south side of road, 100 feet west of T-road to the north; augered July 1957. Altitude of land surface, 1,291.0 feet; depth to water, 9.1 feet.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, reddish-brown.....	3	5

	Thickness, feet	Depth, feet
Silt, tan	5	10
Silt, slightly sandy, tan	5	15
Silt, tan	5	20
Silt, sandy, grayish-tan; some caliche	13	33
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	1	34

29-3W-24bbb.--*Sample log of test hole in NW NW NW sec. 24, T 29 S, R 3 W, 15 feet west of turn in road; augered July 1957. Altitude of land surface, 1,277.6 feet; depth to water, 3.0 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Recent stages (terrace deposits and alluvium)		
Silt, sandy, brown	3	3
Sand, fine to coarse, silty; some fine gravel	7	10
Sand, fine to coarse, and fine gravel; shale fragments	9	19
PERMIAN		
Lower Permian Series		
Wellington Formation		
Shale, grayish-green	1	20

29-4W-6aaa.--*Sample log of test hole in NE NE NE sec. 6, T 29 S, R 4 W, in ditch on west side of road, 42 feet south of center line of east-west road; augered August 1957. Altitude of land surface, 1,377.6 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, brown	3	3
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	4

29-4W-7bbb.--*Sample log of test hole in NW NW NW sec. 7, T 29 S, R 4 W, in ditch on south side of road, 30 feet east of north-south road; augered July 1957. Altitude of land surface, 1,390.6 feet; dry hole.*

NEOGENE
Upper Pleistocene Subseries

	Thickness, feet	*Depth, feet*
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, gray to grayish-tan.....	5	5
Silt, very sandy, pinkish-tan.....	2	7
Silt, reddish-brown and gray.....	3	10
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	2	12

29-4W-12aaa.--*Sample log of test hole in NE NE NE sec. 12, T 29 S, R 4 W, in road, 100 feet west of north-south road; augered August 1957. Altitude of land surface, 1,310.9 feet; depth to water, 9.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, brown.....	10	10
Silt, sandy, red.....	20	30
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, green.....	1	31

29-4W-18bbb.--*Sample log of test hole in NW NW NW sec. 18, T 29 S, R 4 W, on east side of road, 25 feet south of east-west road; augered July 1957. Altitude of land surface, 1,406.5 feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, grayish-tan.....	5	7
Silt, sandy, reddish-tan.....	3	10
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	11

29-4W-18bbc.--*Sample log of test hole in SW NW NW sec. 18, T 29 S, R 4 W, on east side of road, 0.25 mile south of east-west road; augered August 1957. Altitude of land surface, 1,406.8 feet; depth to water, 24.8 feet.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess and terrace deposits, undifferentiated)

	Thickness, feet	*Depth, feet*
Silt, very sandy, grayish-brown to dark-tan.	5	5
Silt, sandy, clayey, grayish-tan; calcareous	2	7
Silt, tannish-red; some fine sand	10	17
Sand, fine to medium, much fine, very silty, reddish-tan	8	25
Sand, fine to coarse, much fine to medium, silty, reddish-tan; many shale fragments.	5	30
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	31

29-4W-19bbb.--*Sample log of test hole in NW NW NW sec. 19, T 29 S, R 4 W, on south side of road, 40 feet east of north-south road; augered July 1957. Altitude of land surface, 1,405.4 feet; depth to water, 18.5 feet.*

	Thickness, feet	*Depth, feet*
Road fill	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits, undifferentiated)		
Silt, sandy, dark-tan	5	6
Silt, sandy, reddish-tan	5	11
Sand, fine to coarse, much fine to medium and fine gravel, silty, tan	4	15
Silt, very sandy, tan; sand size shale fragments in lower 7 feet	22	37
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	38

29-4W-19ccc.--*Sample log of test hole in SW SW SW sec. 19, T 29 S, R 4 W, in ditch on east side of road, 300 feet north of section line; augered August 1957. Altitude of land surface, 1,397 feet; depth to water, 3.5 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Sand, fine to coarse; arkosic, quartzose, some silt; fine gravel and shale fragments in lower 20 feet, some red silt in lower 5 feet	25	25
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Ninnescah Shale		
Shale, grayish-green.....	1	26

29-4W-20aab.--*Sample log of test hole in NW NE NE sec. 20, T 29 S, R 4 W, on south side of road, 0.15 mile west of north-south road, on small rise near field drive; augered July 1957. Altitude of land surface, 1,399.4 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess)		
Silt, sandy, reddish-brown.....	5	7
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red and green.....	1	8

29-4W-20bbb.--*Sample log of test hole in NW NW NW sec. 20, T 29 S, R 4 W, on south side of road, 40 feet east of north-south road; augered July 1957. Altitude of land surface, 1,340.4 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan Stage (terrace deposits)		
Silt, reddish-brown.....	4	6
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	7

29-4W-21aaa.--*Sample log of test hole in NE NE NE sec. 21, T 29 S, R 4 W, on south side of road, 50 feet west of north-south road; augered July 1957. Altitude of land surface, 1,363.9 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, reddish-brown.....	5	5
Silt, tan.....	1	6
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Ninnescah Shale		
Shale, green, hard.....	1	7

29-4W-21bbb.--*Sample log of test hole in NW NW NW sec. 21, T 29 S, R 4 W, on south side of road, 50 feet east of center line of north-south road; augered August 1957. Altitude of land surface, 1,391± feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, brown.....	5	5
Silt, red.....	2	7
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	8

29-4W-22aaa.--*Sample log of test hole in NE NE NE sec. 22, T 29 S, R 4 W, on south side of road, 50 feet west of north-south road; augered July 1957. Altitude of land surface, 1,355.8 feet; dry hole.*

	Thickness, feet	Depth, feet
Road fill.....	1	1
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, sandy, grayish-brown to tan.....	4	5
Silt, sandy, reddish-tan.....	8	13
Sand, fine to coarse, and fine gravel, very silty, red; many red shale fragments.....	1	14
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Siltstone, red.....	1	15

29-4W-28add.--*Sample log of test hole in SE SE NE sec. 28, T 29 S, R 4 W, on west side of road, 200 feet north of half-section fence; augered August 1957. Altitude of land surface, 1,353.2 feet; depth to water, 9.0 feet.*

NEOGENE
Upper Pleistocene Subseries
Wisconsinan and Illinoisan stages (loess and terrace deposits)

	Thickness, feet	*Depth, feet*
Silt, very sandy, dark-tan.....	5	5
Silt, very sandy, tan; less sandy in lower 10 feet.....	15	20
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	21

29-4W-28bcc.--*Sample log of test hole in SW SW NW sec. 28, T 29 S, R 4 W, on road 0.1 mile north of half-section line; augered August 1957. Altitude of land surface, 1,370.3 feet; depth to water, 6.4 feet.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Pleistocene Series, undifferentiated		
Silt, sandy, tannish-gray.....	6	8
Silt, grayish-brown.....	5	13
Silt, sandy, gray.....	29	42
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	43

29-4W-30cbb.--*Sample log of test hole in NW NW SW sec. 30, T 29 S, R 4 W, under small tree across road from barn; augered August 1957. Altitude of land surface, 1,414.4 feet; depth to water, 13.1 feet.*

	Thickness, feet	*Depth, feet*
Road fill.....	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Silt, very sandy, reddish-tan; some fine gravel in the lower 2 feet.....	5	7
Sand, fine to coarse, very silty, reddish-tan.....	6	13
Sand, fine to coarse, much fine to medium, silty, tan.....	2	15
Sand, fine to coarse, and fine to medium gravel; arkosic, some silt.....	5	20
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	5	25

29-4W-30ccb.--*Driller's log of test hole in NW SW SW sec. 30, T 29 S, R 4 W, on east side of road, 0.25 mile north of east-west road (Lane, 1960, p. 132); augered August 1, 1957. Altitude of land surface, 1,416.1 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan and Recent stages (slope deposits, colluvium)		
Silt, red.....	5	5
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	6

29-4W-33dcc.--*Sample log of test hole in SW SW SE sec. 33, T 29 S, R 4 W, on north side of road, 40 feet west of small culvert; augered August 1957. Altitude of land surface, 1,406.7 feet; depth to water 4.1 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and slope deposits, colluvium)		
Silt, sandy, gray to tan.....	5	5
Sand, fine to coarse, very silty; with caliche pebbles; fine gravel and shale fragments in lower 2 feet.....	4	9
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, grayish-green.....	1	10

29-4W-34bab.--*Sample log of test hole in NW NE NW sec. 34, T 29 S, R 4 W, in ditch on south side of road, 100 feet east of wooden bridge, 0.3 mile east of section corner; augered August 1957. Altitude of land surface, 1,369.0 feet; depth to water, 14.3 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Silt, very sandy, tannish-red.....	10	10
Sand, fine to coarse, very silty, reddish-brown; some fine gravel and red shale fragments.....	25	35
Silt, very sandy, reddish-tan.....	5	40
PERMIAN		
Lower Permian Series		

	Thickness, feet	Depth, feet
Ninnescah Shale		
Shale, red.....	2	42

29-4W-34ddd.--*Sample log of test hole in SE SE SE sec. 34, T 29 S, R 4 W, near center of unused road to north, on north side of east-west road; augered August 1957. Altitude of land surface, 1,380.8 feet; depth to water, 13.4 feet.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Silt, sandy, dark grayish-brown.....	7	7
Silt, very sandy, gray to tan.....	3	10
Silt, very sandy, reddish-tan; some caliche; light grayish-tan from 17 to 20 feet.....	17	27
Sand, fine to medium, very silty, red.....	3	30
Sand, fine to coarse, much fine to medium, very silty red; some fine gravel; green and red shale fragments in lower 20 feet.	30	60
Sand, fine to coarse, and fine gravel, slightly silty.....	10	70
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	1	71

29-4W-35ddd.--*Sample log of test hole in SE SE SE sec. 35, T 29 S, R 4 W, on west side of road, 25 feet north of east-west road; augered August 1957. Altitude of land surface, 1,375.2 feet; dry hole.*

	Thickness, feet	Depth, feet
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Silt, dark-brown; some sand.....	5	5
Silt, sandy, clayey, tannish-gray.....	5	10
Silt, sandy, light-gray; some caliche.....	7	17
Silt, sandy, reddish-tan.....	10	27
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, gray.....	1	28

29-5W-14aaa.--*Sample log of test hole in NE NE NE sec. 14, T 29 S, R 5 W, on west side of road, 45 feet south of east-west road (Lane, 1960, p. 134); augered May 12, 1955. Altitude of land surface, 1,403.7 feet; depth to water, 15.1 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan and Sangamonian stages--Crete(?) and Loveland(?) formations		
Silt, sandy, pinkish-tan	6	9
Sand, fine to coarse, silty	16	25
Silt, sandy, gray; calcareous	10	35
Silt, sandy, light-brown	14	49
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	50

29-5W-24bbb.--*Sample log of test hole in NW cor. sec. 24, T 29 S, R 5 W, on east side of road, 100 feet south of east-west road (Lane, 1960, p. 135); augered July 23, 1955. Altitude of land surface, 1,425.2 feet; depth to water, 12.7 feet.*

	Thickness, feet	*Depth, feet*
Road fill	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan and Sangamonian stages--Crete(?) and Loveland(?) formations		
Silt, sandy, tan to grayish-tan	4	7
Silt, sandy, pinkish-tan	3	10
Sand, fine to coarse, and fine to medium gravel; a few thin silt streaks and fragments of Permian shale	10	20
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	5	25

29-5W-26aaa.--*Sample log of test hole in NE cor. sec. 26, T 29 S, R 5 W, on west side of road, 75 feet south of center line of east-west road (Lane, 1960, p. 135); augered May 12, 1955. Altitude of land surface, 1,425.2 feet.*

	Thickness, feet	*Depth, feet*
Soil	3	3
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan and Sangamonian stages--Crete(?) and Loveland(?) formations		
Silt, very sandy, reddish-brown	9	12
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	13

29-5W-35ddd.--*Sample log of test hole in SE cor. sec. 35, T 29 S, R 5 W, on west side of road, 40 feet north of center line of east-west road (Lane, 1960, p. 136); augered May 12, 1955. Altitude of land surface, 1,462.5 feet; depth to water, 9.2 feet.*

	Thickness, feet	*Depth, feet*
Soil	2	2
NEOGENE		
Lower Pleistocene Subseries		
Nebraskan and Aftonian stages--Holdrege and Fullerton formations		
Silt, very sandy, tan to grayish-tan; calcareous	3	5
Sand, fine to medium, very silty	2	7
Sand, fine to coarse, mostly fine to medium.	29	36
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Siltstone, reddish-brown	1	37

30-4W-3baa.--*Sample log of test hole in NE NE NW sec. 3, T 30 S, R 4 W, on south side of road, at hedgerow marking the half-section line; augered August 1957. Altitude of land surface, 1,386.2 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (loess and terrace deposits)		
Silt, sandy, grayish-brown	5	5
Silt, very sandy, reddish-brown; some fine gravel in lower 5 feet	15	20
Silt, sandy, reddish-brown	5	25
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	26

30-4W-3bbb.--*Sample log of test hole in NW NW NW sec. 3, T 30 S, R 4 W; augered August 1958. Altitude of land surface, 1,413± feet; dry hole.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits, colluvium)		
Silt, red	2	4
PERMIAN		
Lower Permian Series		

	Thickness, feet	*Depth, feet*
Ninnescah Shale		
Shale, green.....	1	5

30-5W-14aaa.--*Sample log of test hole in NE cor. sec. 14, T 30 S, R 5 W, on west side of road, 75 feet south of east-west road (Lane, 1960, p. 150); augered August 1955. Altitude of land surface, 1,490.2 feet; depth to water, 26.7 feet.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Lower Pleistocene Subseries		
Nebraskan and Aftonian stages--Holdrege and Fullerton formations		
Sand, fine to coarse, and fine gravel; contains thin streaks of tan silt.....	4	4
Sand, fine to coarse, and fine gravel, silty	6	10
Sand, fine to coarse, and fine gravel; contains streaks of tan silt.....	5	15
Sand, fine to coarse, and fine gravel.....	30	45
Sand, fine to coarse, and fine to medium gravel; contains a few thin silt streaks.	15	60
Sand, fine to coarse, and fine gravel.....	13	73
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red.....	2	75

30-5W-14ddd.--*Driller's log of test hole in SE cor. sec. 14, T 30 S, R 5 W, on west side of road, 50 feet north of center line of east-west road (Lane, 1960, p. 150); augered June 3, 1955. Altitude of land surface, 1,483.1 feet.*

	Thickness, feet	*Depth, feet*
Soil.....	2	2
NEOGENE		
Lower Pleistocene Subseries		
Nebraskan and Aftonian stages--Holdrege and Fullerton formations		
Silt, brown.....	3	5
Silt, tan.....	3	8
Silt, gray.....	4	12
Sand, fine to coarse.....	3	15
Sand, fine to coarse, and fine gravel.....	10	25
Sand, fine to coarse, and fine gravel; contains thin silt streaks.....	5	30
Sand, fine to coarse, and fine gravel.....	20	50

30-5W-26aaa.--*Driller's log of test hole in NE cor. sec. 26, T 30 S, R 5 W, on west side of road, 30 feet south of center line of east-west road (Lane, 1960, p. 151); augered June 8, 1955. Altitude of land surface, 1,425.4 feet.*

	Thickness, feet	*Depth, feet*
Road fill	2	2
NEOGENE		
Upper Pleistocene Subseries		
Wisconsinan and Illinoisan stages (slope deposits)		
Silt, red	2	4
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, red	1	5

30-5W-36ccc.--*Sample log of test hole in SW cor. sec. 36, T 30 S, R 5 W (Bayne, 1962, p. 89); augered June 5, 1955. Altitude of land surface, 1,398.7 feet; dry hole.*

	Thickness, feet	*Depth, feet*
NEOGENE		
Upper Pleistocene Subseries		
Illinoisan and Recent stages (slope deposits)		
Silt, fine, sandy, reddish-brown	4	4
PERMIAN		
Lower Permian Series		
Ninnescah Shale		
Shale, reddish-brown	3	7

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