TEXAS BOARD OF WATER ENGINEERS

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BULLETIN 5403

GROUND-WATER RESOURCES OF CAMERON COUNTY, TEXAS

By

Oscar C. Dale and William O. George

Prepared cooperatively by the Geological Survey,
United States Department of the Interior

February 1954

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ABSTRACT

Cameron County, the southernmost county of Texas, has a population (1950) of about 125,000 persons supported largely by irrigated crops and by industries for processing crops. Water for irrigation and public supplies is obtained mainly from the Rio Grande, but supplementary and emergency supplies of ground water are obtained from sand and gravel of Recent age in the southwestern part of the county.

In the northwestern part of the county shallow wells yield small amounts of water for domestic and stock use, but deeper wells for irrigation purposes yield highly mineralized water; in the eastern part only a few shallow wells yield potable water.

Records of 325 water wells and chemical analyses of samples of water obtained from 200 wells are given in the tables of this report.

PURPOSE AND SCOPE OF THE INVESTIGATION

The investigation in Cameron County was made as part of a cooperative program of the Texas Board of Water Engineers and the U. S. Geological Survey to study the ground-water resources of Texas.

Prior to 1948, ground water in Cameron County was used chiefly for domestic purposes and stock. Municipal supplies were obtained from ground water by the towns of La Feria and Combes. The development of ground water for irrigation started in 1948, but did not become intensive until 1952.

In this investigation, information regarding the thickness, areal extent, and depth of fresh-water-bearing formations was obtained; measurements of the yield and drawdown of 32 wells were made; samples of water were obtained from 200 wells and analyzed in the laboratory of the Geological Survey to determine the chemical character of the water; and six cross sections showing electric logs of water wells and oil tests were prepared.

The records of wells and water samples were collected in 1945 and 1952; the yield and drawdown measurements were made in 1952; and the report was prepared in 1953.

The locations of the wells are shown on plate 1, which is divided into lettered quadrangles within 10-minute lines of latitude and longitude. Wells are numbered consecutively within each lettered quadrangle and all well numbers in the tables and text refer to the letters and numbers on plate 1.

The field work was done and the report prepared under the immediate supervision of W. L. Broadhurst, former district geologist of the Geological Survey in charge of ground-water investigations in Texas, and under the general direction of O. E. Meinzer and A. N. Sayre, former and present chiefs of the Ground Water Branch.

LOCATION AND PHYSICAL FEATURES OF THE COUNTY

Cameron County, the southernmost in Texas (fig. 1), is in the eastern part of the region commonly known as the Lower Rio Grande Valley, and is in the West Gulf Coastal Plain section of the Coastal Plain province. The county has an area of 883 square miles. It is bounded on the north by Willacy County, on the east by the Gulf of Mexico, on the south by the Rio Grande, which marks the international boundary between the United States and the Republic of Mexico, and on the west by Hidalgo County.

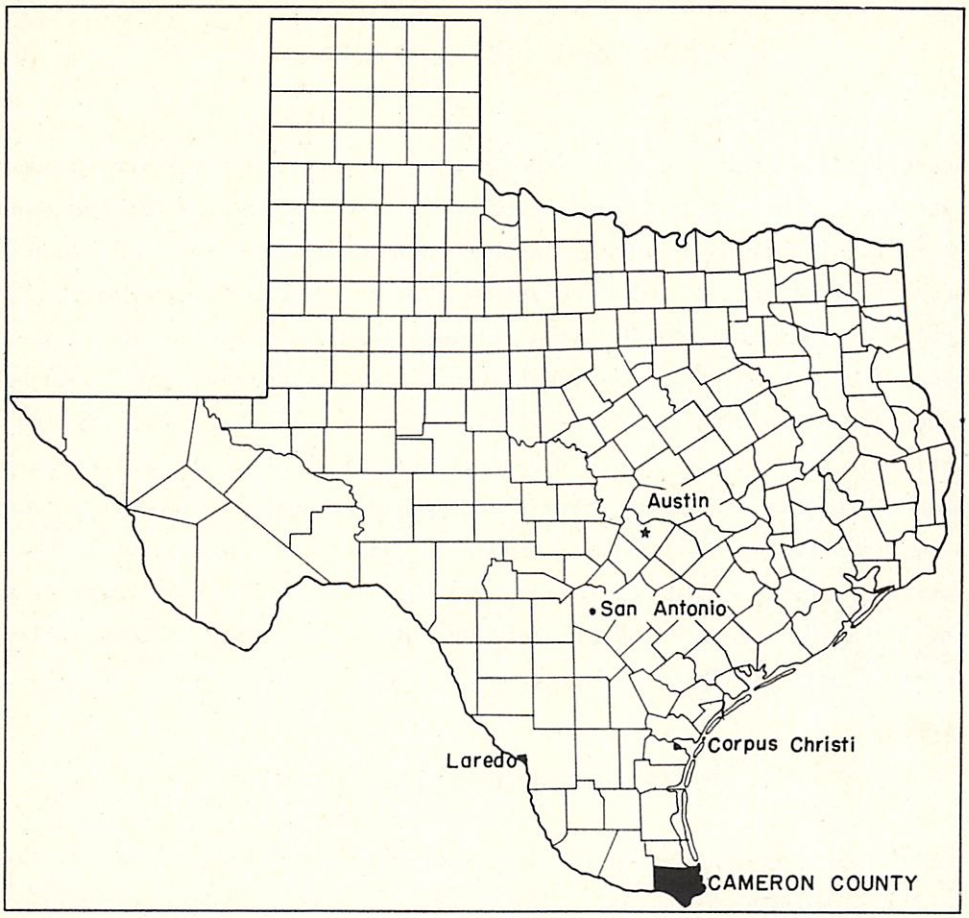


FIGURE 1.— Map of Texas showing location of Cameron County.

The land surface is a flat coastal plain. The altitude of the county ranges from sea level to about 65 feet at the Hidalgo County line. In general, the average slope is about 5 feet to the mile toward the northeast. The northern and west-central parts of the county are drained by the North Floodway (an artificial channel constructed for relief from high water) and the Arroyo Colorado. The main drainage of the southeastern part of the county is provided by the Resaca (bayou) de los Fresnos and the Rancho Viejo Floodway.

According to the United States Bureau of the Census, the county had a population of 125,170 in 1950. Brownsville, whose population was 36,176 in 1950, is the county seat and a deep-water port connected with the Gulf of Mexico by channel. Harlingen, whose population was 23,202 in 1950, is one of the major vegetable-shipping points of the United States and is the site of the Harlingen Air Force Base. It is connected to the Intercoastal Canal by barge line. Other principal towns are San Benito, La Feria, Port Isabel, and Rio Hondo.

ECONOMIC DEVELOPMENT

The economy of Cameron County is dependent on intensive agricultural production, industry, shipping, and tourist trade. Farming is practiced throughout the county, the main crops being cotton, tomatoes, cabbage, potatoes, carrots, and lettuce. The largest income is from cotton. The freezes of 1949 and 1950 diminished citrus production and led to an increase in the cotton acreage. Cameron County produced about 137,000 bales of cotton in 1950. Dairying is practiced extensively, and some beef cattle and poultry are produced. Many oil and gas test wells have been drilled and some production is obtained in the west-central part of the county. Petroleum-gas chemical-products plants are in operation in Brownsville and Port Isabel. Commercial canning is an important factor in the economy of the county. Harlingen is the site of 50 industries, notably cotton byproducts and food products. Many tourists are attracted by the mild climate, fishing, boating, and surf bathing. Brownsville is an important port of entry to Mexico for tourists.

PREVIOUS INVESTIGATIONS

A reconnaissance investigation of the ground-water resources of Cameron County was made by W. L. Broadhurst in 1945. The results of his study were not prepared for publication; many of his data are included in this report. The public water supplies of the cities of Cameron County were described by Broadhurst, Sundstrom, and Rowley (1950, p. 37-41). The geology of Cameron County was discussed in a report by Trowbridge (1932, p. 24-26, 211-215, 225-230).

ACKNOWLEDGMENTS

Appreciation is expressed to the city water officials of Brownsville, Harlingen, San Benito, and La Feria; to the well drillers, particularly Cecil Allbrecht, Fred Taylor, Tom Wilkinson, and the Pursley Brothers; to the farmers and landowners; to the office of the Schlumberger Well Surveying Corp., at Pharr, Tex.; and to the International Boundary and Water Commission, Harlingen, Tex.; all of whom contributed valuable information for this report.

The section of this report on Quality of Water was prepared by James R. Avrett of the Quality of Water Branch of the Water Resources Division.

CLIMATE

According to records of the United States Weather Bureau, the average annual precipitation at Brownsville for a period of 94 years between 1849 and 1953 was 27.21 inches. The annual precipitation ranged from a low of 8.88 inches in 1870 to a high of 60.80 inches in 1855. Table 1 gives the available records of precipitation at Brownsville between 1850 and 1952 as reported by the U. S. Weather Bureau.

The mean annual temperature at Brownsville is 73° F. The prevailing wind throughout the county is from the southeast.

Table 1.- Precipitation at Brownsville, Tex.
(From U. S. Weather Bureau Records)

(Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1850	4.30	3.80	2.30	0.05	2.20	0.06	1.16	0.01	0.25	5.79	0.69	0.15	20.76
51	.95	1.20	.40	1.15	.90	2.35	3.65	1.80	5.60	4.10	3.00	4.70	29.80
52	.50	.60	.35	.00	4.05	5.05	.70	3.90	8.50	4.95	.90	.00	29.50
53	.00	1.60	.00	2.20	.10	1.70	.00	3.10	8.00	7.75	1.30	.65	26.40
1854	.45	1.50	1.15	.05	4.10	7.65	4.25	5.00	11.31	5.69	7.47	1.88	50.60
55	3.47	4.83	3.03	.00	1.92	10.47	7.58	9.52	9.44	5.77	3.85	.92	60.80
56	3.18	1.80	1.50	.88	2.05	3.25	1.90	.58	3.25	5.75	1.45	.55	26.14
57	.10	.35	2.30	1.15	.00	.50	3.25	.65	4.65	4.65	.55	2.55	20.70
58	1.50	.85	.07	.00	1.00	5.15	.70	2.45	5.77	2.75	.45	3.67	24.36
1860	-	-	-	-	.05	.00	.19	8.00	9.07	.57	.15	2.23	20.26
69	-	-	-	-	-	-	-	2.46	10.50	1.20	.10	-	14.26
70	1.60	.00	.00	.90	.00	1.00	.75	.10	2.53	1.00	.70	.30	8.88
1871	.90	T	.30	.10	3.40	.78	.40	1.40	2.80	8.50	1.82	T	20.40
72	T	.00	1.64	.82	.27	1.78	1.92	4.19	4.56	3.61	1.60	1.98	22.37
73	T	.15	.47	.59	.96	.43	1.10	1.98	15.35	2.81	1.71	2.10	27.65
74	.86	1.48	1.90	.30	1.34	1.50	2.81	.30	10.96	.48	4.76	.16	26.85
1875	.56	3.72	1.62	.05	1.45	.16	.40	2.25	4.20	.50	2.35	1.10	18.36
76	.10	1.03	.98	.00	4.36	1.26	2.10	.97	8.85	.22	2.43	3.51	25.81
77	1.27	7.99	.51	.14	1.03	.95	.90	1.52	.69	3.33	1.21	6.32	25.86
78	3.67	.63	4.15	1.25	2.96	.74	6.58	7.20	5.21	.86	1.76	1.34	36.35
79	1.03	1.03	.33	1.57	.05	2.55	1.59	9.48	11.64	4.70	.14	.62	34.73
1880	3.87	1.06	.58	.01	1.56	1.03	3.64	16.58	1.90	3.89	3.44	.58	38.14
81	2.73	1.18	.20	.30	3.43	T	1.49	3.01	5.02	8.72	3.74	1.92	31.74
82	2.95	1.24	3.54	1.63	7.07	1.69	.70	2.21	2.68	3.19	3.28	2.38	32.56
83	1.22	1.01	.63	.38	.83	5.69	4.02	1.97	7.74	1.65	3.32	2.59	31.05
84	1.10	T	.07	.57	5.86	2.74	.23	.88	8.96	15.71	3.45	1.31	40.88
1885	3.87	2.52	1.54	.67	7.17	.54	.22	2.04	3.55	8.29	.20	1.12	31.73
86	1.81	2.33	1.15	.17	6.57	7.78	4.88	3.08	30.57	.55	.48	.69	60.06
87	.22	.68	2.87	.07	3.94	13.80	.33	1.45	13.65	16.27	1.67	4.89	59.84
88	1.98	1.09	2.31	4.79	1.77	2.95	1.30	.94	7.46	2.04	4.99	.91	32.53
89	2.72	3.27	3.61	2.69	1.26	4.43	.50	7.03	7.44	.20	1.44	.02	34.61

Table 1.- Precipitation at Brownsville Tex.--Continued

(Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1890	0.69	1.23	0.14	5.48	3.33	2.32	3.97	1.51	1.51	3.67	1.32	0.38	25.55
91	1.65	1.02	1.80	3.05	1.21	.26	3.00	2.47	6.73	3.13	.82	3.11	28.25
92	.77	1.73	1.79	.50	1.20	.70	1.50	6.20	.46	1.58	3.21	1.19	20.83
93	3.87	2.13	.16	.00	.33	2.12	.72	.18	1.02	.59	2.53	.71	14.36
94	1.67	.68	.89	.04	2.20	.55	6.39	2.78	2.66	.10	.29	.11	18.36
1895	.47	1.10	1.60	.00	3.26	.70	.02	2.98	5.72	.79	1.84	.72	19.20
96	.81	.98	.35	1.35	.04	.85	1.65	.16	4.21	3.48	4.09	1.50	19.40
97	.70	.00	1.00	1.75	.20	1.75	.85	4.63	2.38	1.99	3.03	.71	18.99
98	T	2.43	1.40	.75	1.10	.08	.35	T	4.39	.08	1.55	.18	12.31
99	.46	1.09	.13	1.61	T	2.39	.20	.00	2.70	5.96	3.42	1.54	19.50
1900	2.43	.42	2.05	1.75	.10	1.00	1.20	.20	.70	3.00	.40	1.74	14.99
01	.30	.00	.00	.00	.80	1.00	4.00	1.00	8.00	1.90	2.20	.00	19.20
02	.50	1.30	.00	.80	2.35	.60	.60	.00	6.90	1.25	3.32	.00	17.62
03	2.35	1.72	6.46	.93	2.17	6.54	.53	3.45	2.03	.10	.00	.50	26.78
04	.40	.46	.04	2.78	.83	1.15	4.59	4.47	4.50	1.38	1.24	1.26	23.10
1905	1.61	2.26	1.73	1.98	.98	2.30	2.23	T	3.92	3.17	5.32	3.85	29.35
06	.24	2.29	.10	3.39	1.57	4.45	.91	7.92	1.01	2.70	.24	1.30	26.12
07	.50	.45	1.90	2.50	1.75	.00	1.75	.87	1.59	.78	2.24	1.35	15.68
08	.71	.37	.13	5.98	.71	1.82	2.63	.61	5.01	3.59	4.32	.74	26.62
09	T	1.30	.15	.78	3.11	3.72	1.60	5.60	1.21	.31	.58	2.10	20.46
1910	.35	.25	.23	.81	1.41	.08	.48	7.26	10.71	3.31	.20	.77	25.86
11	.45	2.05	1.78	2.05	1.84	1.21	.63	T	2.75	.66	1.54	2.16	17.12
12	3.28	.17	.20	1.76	1.59	12.78	.13	.12	2.35	13.53	1.40	1.51	38.82
13	2.05	1.00	1.86	.38	1.12	4.96	.28	1.04	14.38	1.76	.64	1.17	30.64
14	.10	2.28	1.86	1.16	9.03	.63	T	.68	.86	2.58	5.13	2.19	26.50
1915	3.35	.04	1.99	1.04	.50	T	.15	2.58	2.54	.82	.14	4.30	17.45
16	.19	.08	.07	1.28	.37	.17	4.52	5.58	3.21	2.23	1.39	.69	19.78
17	.28	.20	1.51	.43	2.57	.71	4.52	.29	1.03	T	.29	.32	12.15
18	.08	.81	.94	2.59	4.31	1.39	1.34	.40	.97	3.37	2.16	3.55	21.91
19	4.56	1.08	.44	2.39	1.97	5.08	6.79	.25	7.69	4.52	2.34	1.08	38.19
1920	1.13	.75	.76	.00	2.90	6.70	2.18	.00	.34	3.56	2.42	.05	20.79
21	2.26	.65	.88	.52	2.40	4.59	2.81	.14	3.82	1.90	1.22	.17	21.36
22	1.51	3.17	1.29	1.52	3.90	5.55	1.92	2.43	12.61	.74	3.67	.38	38.69
23	.13	7.64	1.32	.35	.48	1.98	1.53	1.34	4.55	5.45	3.34	2.86	30.97
24	3.42	.87	.12	.11	3.60	7.00	1.40	.28	7.29	5.12	.03	3.53	32.77
1925	.42	.10	2.64	1.65	2.91	2.59	.04	1.96	19.21	3.99	1.75	3.72	40.98
26	2.72	.02	1.96	2.97	2.89	3.35	3.81	1.84	4.27	2.68	.30	5.62	32.43
27	1.46	.46	.17	.87	.28	6.51	1.19	.41	4.82	2.56	1.32	2.61	22.66
28	1.33	1.73	.16	1.70	6.48	2.68	.71	.51	8.91	2.93	4.88	1.64	33.66
29	.46	.27	.26	.88	8.60	1.54	4.69	3.29	5.16	1.23	1.72	.62	28.72
1930	.56	1.09	1.41	3.09	5.07	3.01	.42	.53	2.80	9.36	5.95	.42	33.71
31	4.56	.81	1.19	.57	.86	1.02	2.79	2.23	1.43	4.47	.88	1.85	22.66
32	1.48	1.80	2.39	6.59	.56	3.48	.17	1.12	9.88	6.36	.59	.75	35.17
33	.22	.84	.40	.53	4.85	.41	4.50	8.06	13.58	3.10	2.42	.05	38.96
34	2.37	.82	2.31	2.35	1.50	.27	3.64	.98	7.49	.35	.66	1.18	23.92
1935	.90	.27	.99	2.04	1.64	4.97	.85	1.14	5.20	2.28	.95	3.93	25.05
36	.41	1.56	.58	2.02	4.05	.66	5.43	6.70	8.15	.61	.45	2.41	33.03
37	2.09	1.30	.69	.51	6.83	.12	3.81	1.55	1.60	.93	.46	6.00	25.89
38	.92	.06	1.87	.96	4.39	2.55	.04	5.65	1.65	.81	.84	1.80	21.54
39	1.56	.28	.22	4.09	6.20	6.29	1.11	1.92	3.62	.50	.33	.42	26.53

Table 1.- Precipitation at Brownsville, Tex.--Continued

(Inches)

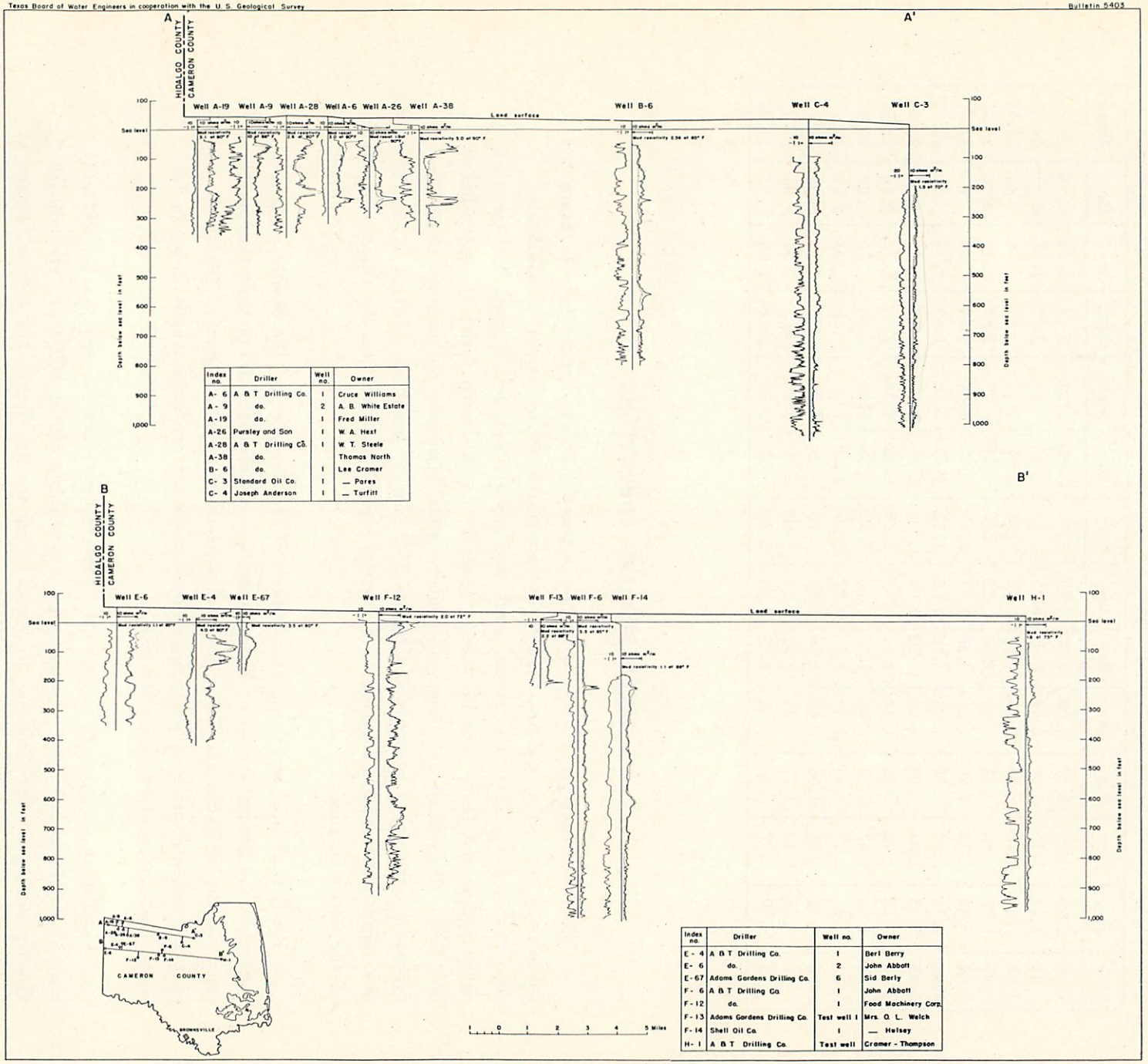
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1940	0.29	0.35	3.57	0.08	2.40	1.68	1.56	0.27	1.58	5.74	2.34	6.95	26.81
41	.73	1.13	3.49	2.19	3.97	8.45	.03	.46	4.41	5.27	1.38	2.98	34.49
42	.60	1.26	.33	.10	1.67	13.06	.62	2.64	2.46	.61	.86	.40	24.61
43	1.80	.03	.31	.04	5.46	.27	.34	.24	7.27	1.62	3.11	4.82	25.31
44	.52	.41	1.26	1.59	5.26	1.91	2.41	7.08	6.54	3.59	.65	1.65	32.87
1945	5.11	.50	.20	1.23	2.26	1.08	1.51	5.61	3.13	5.62	2.76	.72	29.73
46	2.75	1.51	.03	5.85	.52	2.89	.09	2.09	8.05	3.72	.67	.38	28.55
47	.22	1.09	.32	1.44	3.65	.14	2.81	6.93	2.34	1.54	1.76	1.74	23.98
48	1.50	1.67	.57	.02	2.78	1.46	3.02	1.38	8.90	1.29	.32	.02	22.93
49	.39	3.00	.41	1.49	1.85	1.77	5.59	4.14	7.40	.56	.01	2.14	28.75
1950	.18	.71	1.96	.44	1.16	7.58	.11	.49	2.82	2.23	.75	.02	18.45
51	.68	1.10	1.27	.31	2.37	1.37	.40	6.11	4.97	5.35	.20	.08	24.21
52	.10	.27	.16	.45	2.47	3.63	1.39	.50	5.56	1.78	1.90	.62	18.83

WATER-BEARING FORMATIONS

The rocks that yield water to wells in Cameron County are of late Tertiary and Quaternary age. They consist chiefly of unconsolidated or loosely consolidated deposits of clay, silt, sandstone, sand, and gravel, and have a total thickness of several thousand feet. Potable water, however, has not been found at depths below 500 feet. Throughout the county the outcrops are blanketed by soil and windblown deposits. The cross sections in figures 2, 3, and 4, based on electric logs, illustrate the rapid alternation of strata of different types, and indicate the relative quality of the water in them.

The Goliad sand and associated rocks of Pliocene age and the overlying Lissie formation and Beaumont clay of Pleistocene age are probably all within easy drilling depth in the west-central and northwestern parts of Cameron County. The strata dip eastward beneath successively younger formations and are encountered in wells far below the land surface along the coast.

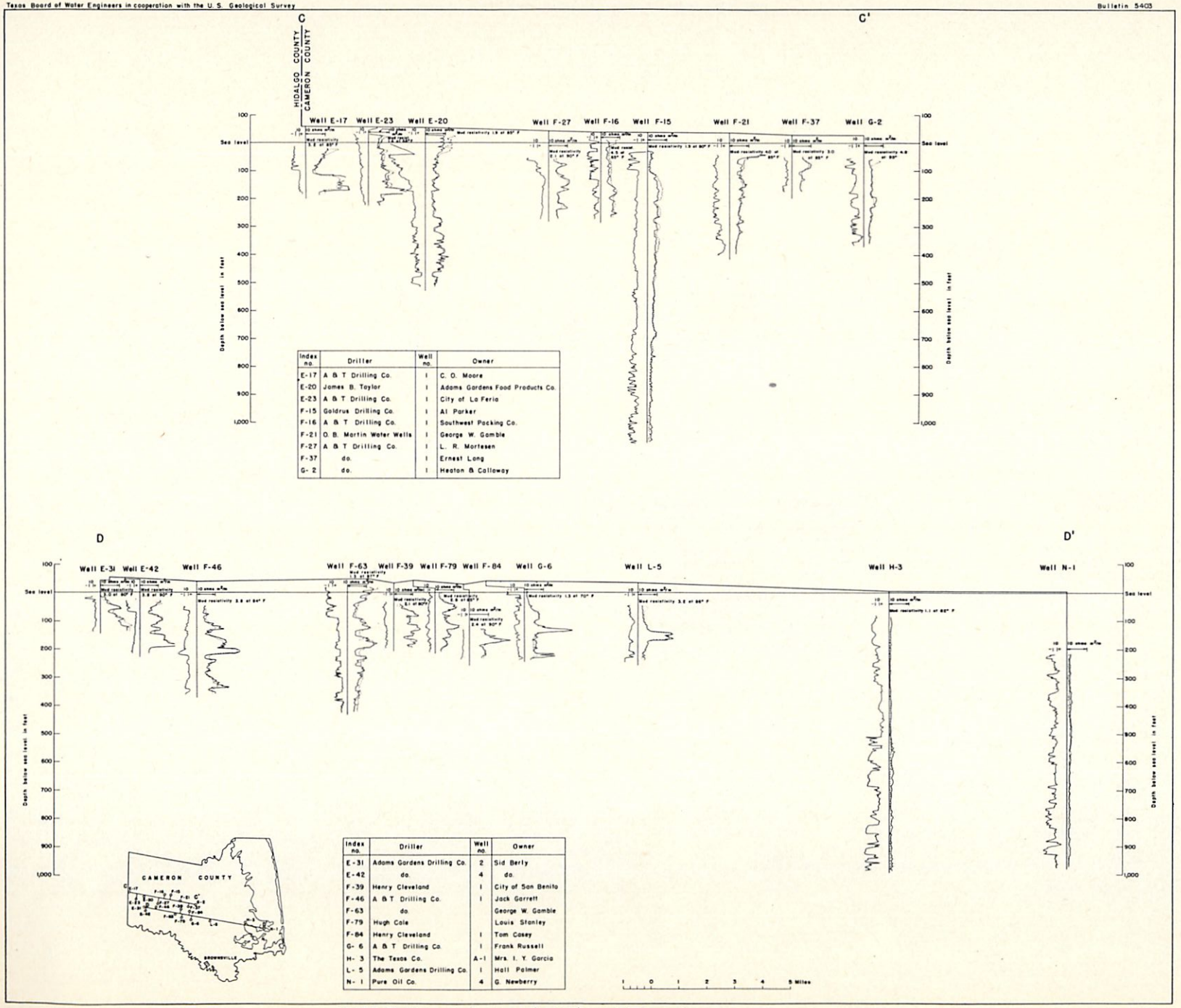
Fluviatile deposits of Recent age, consisting of gravel, sand, silt, and clay, ranging in thickness from a featheredge to possibly 300 or 400 feet, lie beneath the flood plain of the Rio Grande. In places along the Rio Grande the entire section of 300 to 400 feet of alluvium is composed of permeable material which permits ready infiltration of water from rainfall and surface runoff.



Index no.	Driller	Well no.	Owner
A- 6	A & T Drilling Co.	1	Cruce Williams
A- 9	do.	2	A. B. White Estate
A-19	do.	1	Fred Miller
A-26	Pursley and Son	1	W. A. Hext
A-28	A & T Drilling Co.	1	W. T. Steele
A-38	do.		Thomas North
B- 6	do.	1	Lee Cromer
C- 3	Standard Oil Co.	1	— Pores
C- 4	Joseph Anderson	1	— Turfitt

Index no.	Driller	Well no.	Owner
E- 4	A & T Drilling Co.	1	Berl Berry
E- 6	do.	2	John Abbott
E-67	Adams Gardens Drilling Co.	6	Sid Berly
F- 6	A & T Drilling Co.	1	John Abbott
F-12	do.	1	Food Machinery Corp.
F-13	Adams Gardens Drilling Co.	Test well 1	Mrs. O. L. Welch
F-14	Shell Oil Co.	1	— Halsey
H- 1	A & T Drilling Co.	Test well	Cromer - Thompson

FIGURE 2.-Electric logs of wells along A-A' and B-B' in northern Cameron County, Tex.



Index no.	Driller	Well no.	Owner
E-17	A & T Drilling Co.	1	C. O. Moore
E-20	James B. Taylor	1	Adams Gardens Food Products Co.
E-23	A & T Drilling Co.	1	City of La Feria
F-15	Goldrus Drilling Co.	1	Al Parker
F-16	A & T Drilling Co.	1	Southwest Packing Co.
F-21	O. B. Martin Water Wells	1	George W. Gamble
F-27	A & T Drilling Co.	1	L. R. Mortesen
F-37	do.	1	Ernest Long
G-2	do.	1	Heaton & Calloway

Index no.	Driller	Well no.	Owner
E-31	Adams Gardens Drilling Co.	2	Sid Berly
E-42	do.	4	do.
F-39	Henry Cleveland	1	City of San Benito
F-46	A & T Drilling Co.	1	Jack Garrett
F-63	do.		George W. Gamble
F-79	Hugh Cole		Louis Stanley
F-84	Henry Cleveland	1	Tom Casey
G-6	A & T Drilling Co.	1	Frank Russell
H-3	The Texas Co.	A-1	Mrs. I. Y. Garcia
L-5	Adams Gardens Drilling Co.	1	Hall Palmer
N-1	Pure Oil Co.	4	G. Newberry

FIGURE 3.—Electric logs of wells along C-C' and D-D' in central Cameron County, Tex.

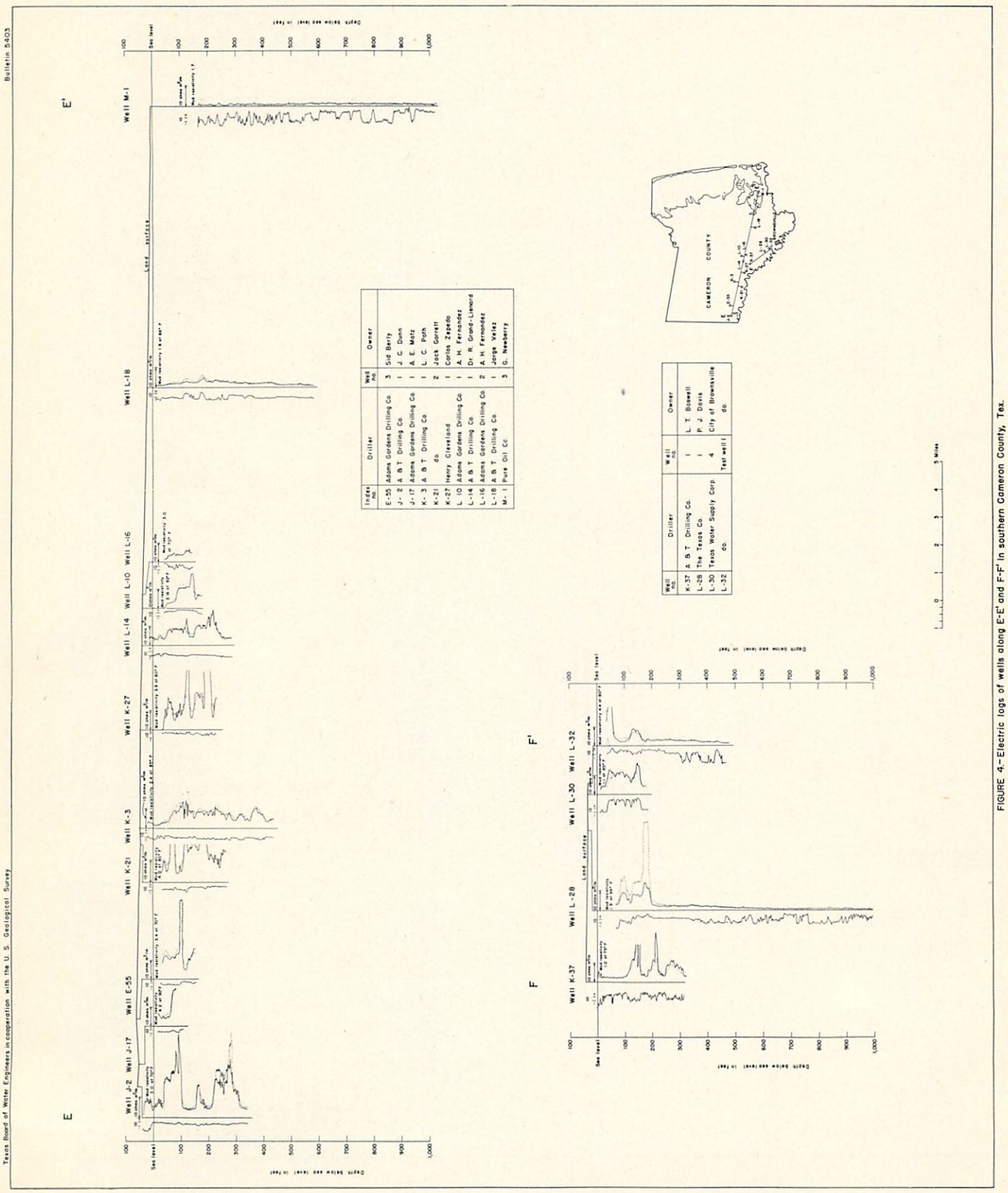


FIGURE 4.–Electric logs of wells along E-E' and F-F' in southern Cameron County, Tex.

Coastal deposits of windblown sand of Recent age are found on Padre Island which forms the outer boundary of Laguna Madre. Small amounts of potable water are obtained on Padre Island from wells less than 6 feet deep (see N-2, tables 3 and 5). The island is 2 to 10 miles from the mainland.

USE OF GROUND WATER

IRRIGATION

About 248,000 acres or 34 percent of the area of Cameron County is under irrigation mainly with water diverted from the Rio Grande. Approximately 85 percent of this acreage is in water districts established under the laws of Texas. Nine-tenths of the remaining acreage not included in the water districts is also irrigated from the Rio Grande. Surface water from various resacas (bayous) and drainage ditches is also used for irrigation.

Irrigation with ground water was started in Cameron County as early as 1948 and increased each year thereafter, becoming greatly accelerated in 1952. Most of the wells are used as "standby" wells in that they are not used except in time of extreme low flow in the Rio Grande. There has been a shortage of surface water in Cameron County for the past several years, which became acute in 1952. To alleviate this shortage, about 150 irrigation wells and irrigation test were drilled. In addition, several hundred shallow sand-point well systems were installed. Most of the shallow irrigation wells are north and east of U. S. Highway 83.

The approximate acreage irrigated with ground water in 1952 was 40,000 acres. The number of acres irrigated is given for most wells in table 3. Estimates of the duty of water are beyond the scope of this investigation and the number of acres irrigated is given only to show the extent of ground-water irrigation resulting from the shortage of surface water. Acreage estimates include land watered by deep wells, shallow well systems, and dug tanks. Most of the wells that are used for irrigation were put down in 1952.

River Flood Plain.- Ground-water irrigation is largely confined to the Rio Grande flood plain. This area is south of the Arroyo Colorado from the Hidalgo County line to Harlingen, and southwest of Highway 83 from Harlingen to Brownsville. The irrigation wells in this area range in depth from 150 to 400 feet, and draw water from beds of alluvial gravel or sand and gravel. The wells yield 500 to 2,100 gallons a minute of water suitable for irrigation. Shallow wells are not used for irrigation in the river flood plain.

Northwestern Part of the County.- Most of the wells northwest of Santa Rosa and Combes yield highly mineralized water (see table 5). The irrigation wells draw water from sands ranging in depth from 240 to 400 feet. The wells yield water in quantities ranging from 700 to 1,800 gallons a minute.

Eastern Part of the County.- In the area east of the Arroyo Colorado and Highway 83 the deeper sands, as shown by test wells, yield water that is unsatisfactory for irrigation or industrial use. Electric logs of test wells no. B-6, F-6, F-21, H-1, and L-18, shown in figures 2, 3, and 4, indicate the presence of highly mineralized water. The electric logs as interpreted for this report, however, indicate only relative permeability and salinity. Water from shallow sands, however, is used for irrigation and is obtained by means of batteries of sand-point wells. The analyses given in table 5 for wells B-9, E-18, F-3, and F-5, indicate the chemical character of the water generally found in the shallow sand.

MUNICIPAL

The public water supplies of Brownsville, Combes, Harlingen, La Feria, Los Fresnos, Port Isabel, Rio Hondo, and San Benito were described by Broadhurst, Sundstrom and Rowley (1950, p. 37-41). La Feria and Combes obtain water exclusively from wells; all other towns in the county ordinarily obtain water from the canals to the Rio Grande.

The city of La Feria in west-central Cameron County draws water from alluvium of the Rio Grande Valley at depths ranging from about 150 to 245 feet. Two wells were used by the city in 1952. Well 2 (E-23), 267 feet deep, was completed in 1946. At that time well 2 yielded 750 gallons a minute with a drawdown of 90 feet, indicating a specific capacity of 8.3 gallons a minute per foot of drawdown. The pumping level was 110 feet below the land surface.

Well 3 (E-25), 242 feet deep, was completed in 1949. The measured yield at that time was 740 gallons a minute with a drawdown of 34 feet, indicating a specific capacity of 21.8 gallons a minute per foot of drawdown. The static water level at time of completion was 14 feet below the land surface.

No record was kept of the daily pumpage in 1952. The following table shows the average daily pumpage and monthly withdrawal for the city of La Feria for 9 months of 1950.

Table 2.- Average daily pumpage and monthly withdrawal for the city of La Feria for 9 months of 1950

Month	Monthly use (gallons)	Daily average (gallons)	Rainfall at City Hall (inches)
Apr.	14,484,800	482,800	1.30
May	5,119,500	170,600	5.59
June	7,351,000	245,000	2.46
July	14,492,800	483,900	-
Aug.	10,497,400	349,000	.70
Sept.	11,407,800	380,200	.59
Oct.	7,510,300	250,300	2.90
Nov.	4,255,100	141,500	2.64
Dec.	4,797,100	151,900	-

It is believed that the pumpage was not greatly increased in 1952.

The results of analyses of water from the city wells are given in table 5.

Combes, an unincorporated town, is partially supplied by a private water system. See well F-2. Some of the residences are supplied by individual wells equipped with windmills.

Throughout 1952 the cities of Cameron County that use surface water for municipal supplies were short of water. The city of Brownsville drilled four wells within the city limits to alleviate this shortage. Of these wells nos. L-29 and L-30 yielded potable water from alluvium between depths of 106 and 198 feet. The static water level of well L-30 on October 23, 1952 was 14.3 feet below the land surface. Water from these two wells is used to supplement the surface-water supply.

The city of Harlingen uses a small amount of ground water for municipal supply in times of shortage of surface water. The city-owned well (E-51) was drilled 9 miles southwest of Harlingen in 1952 and yields water from gravel between 146 and 170 feet. Water from this well is transported to the city filtration plant through about 9 miles of open canal.

The city of San Benito drilled a well (F-39) within the city limits in 1952 as an additional source of municipal supply. The well yields water from gravel between 112 and 169 feet. The static water level before the pump was installed was 11.0 feet below the land surface.

INDUSTRIAL

A small amount of ground water is used for industrial purposes in Cameron County. The Central Power and Light Co. drilled three wells within the city limits of San Benito for use at the La Palma power plant in times of shortages of surface water. These wells, F-31, F-32, and F-33, were completed in 1952 and yield water from alluvium at depths between 153 and 240 feet. Pumping tests of the wells were made by the Layne-Texas Co., Ltd., at the time of completion. During the tests, well F-31 yielded 412 gallons a minute; well F-32 yielded 450 gallons a minute; and well F-33 yielded 536 gallons a minute.

DOMESTIC AND STOCK

In the river flood plain water for domestic and stock use is generally obtained from alluvium at depths from 130 to 220 feet. In the northwestern part of the county wells from 18 to 40 feet deep yield from 2 to 5 gallons of water a minute suitable for domestic and stock use. In the eastern part water at all tested depths is generally too highly mineralized for most purposes but a few shallow wells yield water of relatively good quality.

QUALITY OF WATER

The chemical character of the water in Cameron County is shown by the results of analyses of water from 200 wells listed in table 5. These analyses were made by the methods in general use by the U. S. Geological Survey and are reported in parts per million (parts of dissolved substance by weight in a million parts of solution).

The suitability of water for irrigation depends upon the chemical character of the water, the amount of water used, the rainfall, the drainage, the character of the soil, and the crops grown. Waters of high content of dissolved solids are unsatisfactory because, where drainage is poor, salts accumulate in the soil and may retard or prevent normal growth of crops. Water having a high percent of sodium may disperse the soil colloids and make the soils impermeable.

Boron, although necessary in minute quantities for optimum growth, seems to be harmful to some plants when present in slightly more than optimum amounts. Much of the ground water in Cameron County contains more than the optimum amount of boron.

The following table, condensed from Magistad and Christiansen (1944, p. 9) is frequently used as a guide for the appraisal of irrigation water.

Water class	Dissolved solids	Sodium (percent)	Boron (parts per million)
Class 1 a/	Less than 700	less than 60	Less than 0.5
Class 2 b/	700 to 2,000	60 to 75	0.5 to 2.0
Class 3 c/	more than 2,000	more than 75	more than 2.0

a/ Excellent to good; suitable for most plants under most conditions.
b/ Good to injurious; probably harmful to more sensitive crops.
c/ Injurious to unsatisfactory; probably harmful to most crops and unsatisfactory for all but the most tolerant.

The foregoing standards, when applied to the irrigation wells in the river flood plain of Cameron County, would indicate that most of the water is suitable for irrigation. About 30 percent of the water sampled in the flood plain that is used for irrigation had less than 1,000 parts per million dissolved solids and about 70 percent of the water sampled had from 1,000 to 2,000 parts per million.

The irrigation wells in the northwestern part of the county yield water generally containing in excess of 2,000 parts per million of dissolved solids. Some sand-point irrigation systems in the eastern part of the county yield water containing from about 800 to 1,500 parts per million of dissolved solids, whereas others yield water having more than 3,000 parts per million of dissolved solids. No deep irrigation wells are in the eastern part of the county.

SUMMARY

The data presented in this report indicate that a fairly large portion of Cameron County is underlain by ground-water reservoirs containing water suitable for most purposes that can be used to supplement surface water supplies in time of drouth. The reservoirs underlying the flood plain of the Rio Grande which lies south of Arroyo Colorado and southwest of U. S. Highway 83 appear to contain the most abundant supplies of comparatively good quality.

The recent data contained in this report was obtained during a period of emergency and rapid ground-water development. Many wells have been drilled since the data was assembled. It is believed that the collection of additional data made available by subsequent drilling, together with a more intensive study of geologic and hydrologic conditions is needed as a guide to further development of the ground-water reservoirs of the county.

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TROWBRIDGE, A. C., 1932, Tertiary and Quaternary geology of the Lower Rio Grande region, Texas: U. S. Geol. Survey Bull. 837, p. 25-26, 211-215, and 225-230.

Table 3.- Records of wells in Cameron County, Texas

(All wells are drilled unless otherwise noted in remarks)

Method of lift: A, air lift; B, butane; C, cylinder; Cf, centrifugal; E, electric; G, gasoline; H, hand; J, jet; T, turbine; W, windmill. Number indicates horsepower.

Use of water: D, domestic; Ind, industrial; Irr, irrigation; N, not used; P, public supply; RR, railroad; S, stock.

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							b/Below land surface datum (ft.)	Date of measurement			
*A-1	W. A. Stohl	Ted Pursley	1950	367	8	42.5	a/12.0	Jan., 1952	T,B, 60	Irr	Casing: 367 feet, screen at 284-366 feet. Reported yield 800 gpm. Irrigates 200 acres. See log.
A-2	do.	W. A. Stohl	1950	20	2	42.0	-	-	J,E, 1	D,S	Sand-point well.
*A-3	do.	Ted Pursley	1950	361	8	42.2	a/12.0	Jan. 1952	T,B, 60	Irr	Casing: 354 feet . Screen at 270-354 feet. Reported yield 700 to 800 gpm. See log.
*A-4	Frank Solis	Harry King	1949	25	3	45.0	-	-	C,W	D,S	Sand-point well. Reported very hard.
A-5	M. W. Nelson	M. W. Nelson	1950	18	3	39.0	-	-	C,W	D,S	Sand-point well. Reported water will kill shrubbery.
*A-6	Cruce Williams	A & T Drilling Co.	1952	329	12¾	45.0	a/18.0	July 1952	T,B, 145	Irr	Casing: 300 feet, slotted from 288 to 298 feet, 3-stage pump cemented. Irrigates approximately 100 acres c/. See electric log figure 2.
*A-7	do.	Cruce Williams	1949	27	2	45.0	a/20.0	1949	J,E, 1½	D,S	Sand-point well. Uses water softener.
A-8	do.	Ted Pursley	1949	300	4	45.0	-	-	T,E, 3	D,S	Water reported from sand and gravel at 270-300 feet.
A-9	A. B. White Estate	A & T Drilling Co.	1951	393	-	41.5	-	-	-	-	Test hole. See electric log figure 2.
*A-10	do.	Harry King	1944	40	1¼	42.0	-	-	C,W	S	Sand-point well.
A-11	M. W. Nelson	M. W. Nelson	1948	20	3	41.0	a/12.0	Dec. 1951	C,H	S	Do.
*A-12	do.	Ted Pursley	1950	366	8-5/8	42.0	a/12.0	Dec. 1951	T,B, 75	Irr	Casing: 366 feet, slotted from 271 to 363 feet. Irrigates approximately 100 acres. See log.
A-13	Ramon de la Rosa	-	1940	20	1½	42.0	a/10.0	1940	C,W	D,S	Sand-point well. Reported very salty.
*A-14	Chester Johnson	Ted Pursley	1951	365	8-5/8	42.0	-	-	T,B, 60	Irr	Casing: 271 feet of 8 5/8-inch, 6 5/8-inch screen at 271-363 feet. Irrigates 80 acres. See log.

a/ Reported by owner or driller.

b/ Altitude estimated from U. S. Geological Survey topographic maps, contour interval 1 foot.

c/ Duty of water not determined.

* For chemical analyses, see table 5.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
*A-15	Chester Johnson	Ted Pursley	1951	365	8-5/8	42.5	-	-	T,B, 60	Irr	Casing: 270 feet of 8 5/8-inch, 6 5/8-inch screen at 271-363 feet. Irrigates approximately 80 acres.
*A-16	M. A. Giese	Pursley & Son	1950	362	12¾	45.5	a/10.0	Dec. 1951	T,B, 75	Irr	Casing: 362 feet, slotted from 247 to 360 feet. Pumps large amount of sand. Irrigates 150 acres. See log.
A-17	J. Solis	-	1940	20	2	49.0	-	-	C,H	D,S	Sand-point well.
A-18	Martin Cavazos	-	1943	30	2	48.0	-	-	C,W	D,S	Sand-point well. Reported good water.
*A-19	Fred Miller	A & T Drilling Co.	1950	390	12	44.7	22.3	Sept. 11, 1952	T,B, 60	Irr	Casing: 260 feet of 12-inch, 8-inch screen at 260-360 feet. Yield 650 gpm. See electric log figure 2. Temp. 78° F.
A-20	-	-	-	30	2	45.0	-	-	C,W	S	Sand-point well. Salty water.
A-21	Armando Izanaga	-	-	30	3	51.0	-	-	J,E, 1½	P	Sand-point well. Supplies restaurant and bar.
*A-22	J. G. Ballinger	J. G. Ballinger	1951	21	2	46.0	a/16.0	Jan. 1952	J,E, 1½	D	Sand-point well. Supplies two families. Temp. 77° F.
*A-23	R. B. Ballinger	R. B. Ballinger	1948	20	2	45.0	a/18.0	Jan. 1952	C,H	D,S	Sand-point well. Water sand from 16 to 20 feet. Temp. 77° F.
A-24	J. G. Ballinger	-	Old	30	1¾	39.0	-	-	C,W	S	Sand-point well.
*A-25	do.	Harry King	1945	30	2	42.0	-	-	C,H	S	Do.
A-26	W. A. Hext	Pursley & Son	1952	325	-	40.0	-	-	-	-	Could not set casing in this hole. See electric log figure 2.
A-27	Francisco Tovar	-	1948	25	2	46.5	-	-	C,H	D,S	Sand-point well; replacing two wells abandoned because of salt water.
A-28	W. T. Steele	A & T Drilling Co.	1952	297	12¾	48.0	-	-	T,B, 65	Irr	Casing: 200 feet of 12¾-inch, 9 5/8-inch screen at 200-297 feet. Cemented. Irrigates 60-80 acres. See electric log figure 2.
*A-29	E. E. Petri	Carl Junker	1939	254	2	45.0	a/40.0	1939	C,W	S	Casing: 254 feet, open end. Water in coarse-grained sand.
*A-30	Bob Harper	do.	-	110	2	45.0	-	-	C,W	S	Sand-point well.
A-31	-	The Layne-Texas Co., Ltd.	1926	241	-	48.9	a/11.0	Dec. 1926	-	-	Test well. See log.
*A-32	H. E. Rushing	O. N. Gilliland	1938	96	2	48.0	-	-	C,W	D,S	Sand-point well.
A-33	F. H. Vahlsing	-	Old	25	2	43.0	-	-	C,H	D	Do.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*A-34	F. H. Vahlsing	A. E. Fawcett	1949	697	12	42.0	a/ 6.0	Jan. 1952	T,B, 55	Irr	Reported yield 900 gpm. Irrigates 200 acres.
*A-35	do.	do.	1949	692	12	41.0	a/ 4.0	Jan. 1952	T,B, 55	Irr	Casing and screens unknown. Reported yield 800 to 900 gpm. Well flowed when drilled. Irrigates 200 acres.
*A-36	do.	-	1931	35	2	41.0	a/30.0	Sept. 1945	C,W	D,S	Sand-point well.
A-37	Thomas North	-	1949	30	3	39.7	-	-	J,E, 1½	D,S	Do.
*A-38	do.	A & T Drilling Co.	1951	363	14, 10¾	40.0	a/18.0	Nov. 1951	T,B, 75	Irr	Casing: 265 feet, 10¾-inch screen at 279-300 feet. Cemented. 6-stage pump set at 180 feet. Irrigates 160 acres. See electric log, figure 2.
A-39	Otho Wyrick	A. E. Fawcett	1946	472	-	40.0	-	-	-	-	Reported yield 1,500 gpm. Test well. Electric log in files of State Board of Water Engineers.
A-40	Jack Fett	Pursley & Son	1952	558	-	41.0	-	-	-	-	Test well. See log.
*A-41	Otho Wyrick	Otho Wyrick	1950	14	-	40.0	a/12.0	Jan. 1952	Cf,B, 90	Irr	A seep tank 300 feet long, 75 feet wide, and 14 feet deep. Irrigates 160 acres. Can pump 12 hours then stops 12 hours for recovery.
A-42	C. A. Ripley	James Taylor	1945	1,000	12¾, 8-5/8	52.0	-	-	T,E	Ind	Casing: 70 feet of 12¾-inch, 8 5/8-inch from 70 to 200 feet. Gravel-walled well. Slotted casing. Supplies packing shed.
B-1	Henry Adrain	-	Old	30	2	37.0	-	-	C,W	D,S	Sand-point well.
B-2	F. B. Zamarron	-	1952	35	2	33.0	14.0	July 23, 1952	-	Irr	Six sand-point wells spaced 20 feet a part. Irrigates 100 acres.
*B-3	Armendiaz Estate	F. B. Zamarron	1951	30	2	31.0	-	-	J,E, 1½	D,Irr	Three sand-point wells. Irrigates 1 acre.
B-4	John Flannigan	-	1945	30±	2	34.0	-	-	C,W	D,S	Sand-point well.
B-5	Mrs. E. Ballinger	-	Old	27	2	27.0	-	-	C,W	D,S	Do.
B-6	Lee Cramer	A & T Drilling Co.	1951	822	-	28.0	-	-	-	-	Irrigation test well. See electric log, figure 2.
*B-7	Carlos Hext	-	-	20	1¼	27.0	-	-	C,W	D	Sand-point well.
B-8	A. B. White Estate	-	1952	40	2	27.5	a/10.0	Nov. 17, 1952	Cf,G, 50	Irr	Twenty-eight sand-point wells. Irrigates 100 to 200 acres.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*B-9	H. E. Butt	B. L. Schwarz, Jr.	1952	-	2	27.0	a/ 7.0	Nov. 17, 1952	Cf,B, 145	Irr	Thirty-nine sand-point wells ranging from 40 to 60 feet in depth. Reported capacity 1,000 gpm. Irrigates 1,000 to 1,200 acres. Temp. 78° F.
B-10	Armendiaz Estate	--	Old	30	2	31.0	--	--	C,W	D,S	Sand-point well.
*B-11	Lucio Perez	H. King	1947	27	2	38.0	--	--	C,W	D,S	Sand-point well. Temp. 79° F.
B-12	Armendiaz Estate	Magnolia Petroleum Co.	1945	9,620	--	37.0	--	--	--	--	Oil test. See log.
*B-13	Roy Johnson	--	Old	35	1¼	41.0	--	--	C,W	D,S	Sand-point well.
B-14	N. O. Berry	N. O. Berry	1951	15	--	34.0	--	--	Cf,G, 60	Irr	A dug seep tank approximately 200 feet long. Irrigates 60 to 80 acres.
C-1	Phillip Wardner Estate	The Texas Co.	1951	2,100	--	15.0	--	--	--	--	Oil test. See log.
*C-2	Horace Grissom	--	--	16	60	14.0	10.3	July 30, 1945	H	D,S	Dug. Temp. 76° F.
C-3	-- Pares	Standard Oil Co.	--	--	--	16.0	--	--	--	--	Oil test. See electric log figure 2.
C-4	-- Turfitt	Joseph Anderson	1935	--	--	34.0	--	--	--	--	Do.
*E-1	H. S. Norman	O. N. Gilliland	1943	206	2	48.0	--	--	J,E	D,S	Sand-point well.
*E-2	Wilson School	Harry King	1945	55	1¼	41.0	7.1	July 15, 1945	J,E	P,S	Do.
E-3	F. B. Smith	A & T Drilling Co.	1952	248	16	45.0	a/22.0	Nov. 19, 1952	T,B, 72	Irr	Casing: 16-inch to 125 feet, 12¾-inch screen at 125-185 feet. Plugged at 185 feet. Irrigates 80 acres. Electric log in files of State Board of Water Engineers.
*E-4	Berl Berry	do.	1952	451	12¾	47.5	--	--	T,B, 145	Irr	Casing: 12¾-inch to 124 feet. Screen at 124-200 feet. Plugged at 200 feet. Pump set at 117 feet. Reported yield 900 gpm. See log. See electric log, figure 2.
E-5	Carl Junker	Carl Junker	--	34	2	--	--	--	C,W	D,S	Sand-point well.
E-6	John Abbott	A & T Drilling Co.	1952	390	12¾	52.0	23.1	Oct. 13, 1952	T,B, 54	Irr	Casing: 12¾-inch to 260 feet. Screen at 260-330 feet. 3-stage pump set at 120 feet. Cemented. Irrigates approximately 300 acres. See log. See electric log, figure 2.
*E-7	Will McCorkele	do.	1952	243	12¾	56.0	--	--	T,B, 72	Irr	Casing: 12¾-inch to 243 feet. Slotted from 224 to 242 feet. 3-stage pump set at 120 feet. Reported yield 1,500 gpm. Irrigates 150 acres. See log.
E-8	H. M. Snap	Otis Gilliland	1952	--	2	54.0	--	--	Cf,E, 5	Irr	Eighteen sand-point wells 30 to 50 feet deep. All wells connected to 3-inch suction pipe. Irrigates 20 to 30 acres.
*E-9	A. L. Allen	--	1926	26	4	56.0	8.4	Sept. 8, 1945	J,E, 1½	D,S	Sand-point well.
E-10	J. J. Thompson	-- Thompson	1924	29	2	44.0	--	--	C,W	D,S	Do.
*E-11	E. N. Keeton	Carl Junker	1945	34	2	57.0	8.3	July 19, 1945	J,E, 14	D	Sand-point well. Temp. 79° F.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
E-12	La Feria Water District	The Layne-Texas Co., Ltd.	1926	66	24	53.0	--	--	--	--	Test well. Gravel-walled. Screen at 21-66 feet. Measured yield 350 gpm. Reported drawdown 41 feet.
E-13	H. M. Snap	H. M. Snap	1952	--	2	56.5	--	--	Cf, G, 25	Irr	Twenty sand-point wells connected to 3-inch suction pipe. Irrigates 20 acres.
E-14	do.	do.	1952	--	2	57.0	--	--	Cf, G, 50	Irr	Do.
E-15	D. M. Cool	D. M. Cool	1952	--	2	57.0	--	--	Cf, G, 55	Irr	Eleven sand-point wells connected to 4-inch suction pipe. Irrigates 40 acres.
*E-16	Willis Seward	A & T Drilling Co.	1952	240	12	56.5	a/ 8.0	July 2, 1952	T, B, 159	Irr	Casing: 240 feet, slotted from 232 to 239 feet. 3-stage pump set at 120 feet. Irrigates 300 acres.
*E-17	C. O. Moore	do.	1952	238	12¾	60.0	a/10.0	do.	T, B, 75	Irr	Casing: 188 feet, screen at 188-238 feet. 3-stage pump set at 120 feet. Irrigates 205 acres. See electric log, figure 3.
*E-18	N. M. Groves	N. M. Groves	1952	35	2	59.0	a/ 8.0	July 9, 1952	Cf, G, 15	Irr	Six sand-point wells connected to 3-inch suction line. Reported sand from 12 to 35 feet. Irrigates 40 acres.
*E-19	J. C. Dunn	James B. Taylor	1944	216	14	55.0	--	--	T, E, 10	Ind	Casing: 186 feet, screen at 186-216 feet. 2-stage, 12-inch bowl pump. Supplies packing shed. Temp. 79° F.
*E-20	Adams Gardens Food Products Co.	do.	1945	565	12¾	57.0	a/11.0	June 9, 1945	T, E, 15	Ind	Casing: 321 feet, slotted from 321 to 502 feet. Measured yield 625 gpm. Drawdown 17 feet. See electric log, figure 3. See log.
*E-21	D. G. Dill	--	1945	23	1¼	48.0	--	--	J, E, ¼	D	Sand-point well.
*E-22	Henry Sepp	Carl Junker	1942	40	2	53.0	5.8	July 15, 1945	J, E	D	Sand-point well. Temp. 76° F.
*E-23	City of La Feria	A & T Drilling Co.	1946	267	13-3/8	55.0	a/20.0	June 18, 1952	T, E, 30	P, S	Casing: 148 feet, 10¾-inch screens from 148 to 262 feet. 5-stage pump. Measured yield 750 gpm. Drawdown 90 feet. See electric log, figure 3.
E-24	do.	The Layne-Texas Co., Ltd.	1929	216	16	55.0	--	--	--	--	Abandoned in 1946. See log.
*E-25	do.	A & T Drilling Co.	1949	242	18	55.0	a/14.0	Sept. 8, 1949	T, E, 30	P, S	Casing: 155 feet, 10¾-inch screen at 155-242 feet. Measured yield 740 gpm. Drawdown 34 feet. Gravel-walled. Cemented. See log.
E-26	Rabb Tract	The Layne-Texas Co., Ltd.	1926	232	--	68.0	a/ 8.0	1926	--	--	Irrigation test. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
E-27	W. W. Cloud	--	1952	--	6	54.0	--	--	Cf,G, 50	Irr	Two sand-point wells connected to 6-inch suction pipe. Irrigates 40 acres.
*E-28	Paul Davies	Waldrep & Hamilton	1945	246	2	50.0	a/20.0	Aug. 10, 1945	J,E	D,S	Casing: 242 feet, open end. See log.
*E-29	H. G. McCrum	Carl Junker	1943	218	2	44.0	a/10.0	July 15, 1945	C,E, 1/3	D	Casing: 218 feet, open end. Gravel from 200 to 218 feet. Pump set at 50 feet.
*E-30	Sid Berly	Adams Gardens Drilling Co.	1952	214	12	44.0	--	--	T,E, 75	Irr	Casing: 214 feet, slotted from 200 to 214 feet. This is one of 5 wells that irrigates 2,000 acres. Electric log in files of Texas Board of Water Engineers.
*E-31	do.	do.	1952	184	12	51.0	28.5	July 7, 1952	T,E, 75	Irr	Casing: 184 feet, slotted from 163 to 184 feet. See electric log, figure 3. Temp. 78° F.
*E-32	B. H. Dunlap	A & T Drilling Co.	1952	229	12¾	60.0	--	--	T,B, 145	Irr	Casing: 229 feet, slotted from 222 to 228 feet. 3-stage pump set at 120 feet. Measured yield 950 gpm. Irrigates 100 acres. Temp. 78° F. See log.
E-33	Leslie & Ernest Moore	Gene Liberty	1952	190	12	54.0	a/21.0	June 18, 1952	T,B, 55	Irr	Casing: 190 feet, slotted from 174 to 190 feet. Irrigates approximately 200 acres.
*E-34	Martin Palmer	A & T Drilling Co.	1952	214	12¾	55.0	23.1	Oct. 5, 1952	T,E, 40	Irr	Casing: 214 feet, slotted from 201 to 213 feet. Measured yield 763 gpm. Irrigates 100 acres. Temp. 79° F. See log.
*E-35	T. S. Wallace	O. N. Gilliland	1945	201	1¼	54.0	14.5	July 27, 1945	J,E, ¼	D,S	Casing: 201 feet, open end. See log.
*E-36	John Weckl	A & T Drilling Co.	1949	350	12	56.0	--	--	T,G, 65	Irr	Casing: 350 feet, slotted-unknown. Reported yield 1,200 gpm. Irrigates 103 acres. Temp. 78° F.
*E-37	Carl Zeitler	Carl Junker	1927	217	2	54.0	--	--	C,W	D,S	Casing: 217 feet, open end. Temp. 78° F.
*E-38	Bob Hall	A & T Drilling Co.	1952	225	12¾	53.0	31.9	July 24, 1952	T,B, 72	Irr	Casing: 225 feet, slotted from 217 to 224 feet. Measured yield 756 gpm. Irrigates 300 acres. Cemented with 60 sacks of cement. Temp. 79° F. See log.
*E-39	do.	do.	1952	155	12¾	59.0	18.2	Oct. 2, 1952	T,E, 75	Irr	Casing: 155 feet, slotted from 147 to 154 feet. Measured yield 669 gpm. Drawdown 67 feet. 4-stage pump set at 150 feet. Cemented with 60 sacks of cement. Irrigates 140 acres. See log.
*E-40	Sid Berly	do.	1952	228	12	53.5	a/19.0	July 2, 1952	T,E, 50	Irr	Casing: 228 feet, slotted from 220 to 227 feet. Temp. 79° F. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
E-41	Odell Morrow	A & T Drilling Co.	1952	257	12¾	48.0	--	--	T,B	Irr	Casing: 257 feet, slotted from 240 to 250 feet. 3-stage pump set at 120 feet. Cemented with 75 sacks of cement. Irrigates about 60 acres.
°E-42	Sid Berly	Adams Gardens Drilling Co.	1952	255	12	51.5	--	--	T,E, 75	Irr	Casing: 255 feet, slotted from 247 to 255 feet. One of 5 wells that irrigates 2,000 acres. Temp. 79° F. See electric log, figure 3.
°E-43	H. C. Lewis	A & T Drilling Co.	1951	168	12¾	52.0	a/19.0	Jan. 16, 1952	T,B, 145	Irr	Casing: 168 feet, slotted from 157 to 165 feet. Irrigates 80 acres. Temp. 78° F. See log.
E-44	T. S. Wallace	--	Old	135	6	56.0	13.6	July 27, 1945	C,W	S	Casing: 135 feet. See log.
E-45	Ed Wolfe	A & T Drilling Co.	1952	169	122	57.0	18.9	Aug. 19, 1952	T,B, 145	Irr	Casing: 169 feet, slotted from 153 to 168 feet. 3-stage 12-inch bowl pump set at 120 feet. Cemented with 69 sacks of cement. Irrigates 40 acres. See log.
°E-46	Felix Till	do.	1952	155	12¾	59.0	--	--	T,B, 65	Irr	Casing: 155 feet, slotted from 138 to 153 feet. 3-stage pump set at 120 feet. Reported yield 900 gpm. Irrigates 80 to 100 acres. See log.
°E-47	Richard Rowland	do.	1952	175	12¾	56.5	--	--	T,E, 75	Irr	Casing: 175 feet, slotted from 161 to 174 feet. Cemented with 60 sacks of cement. Irrigates 100 acres. Reported yield 1,000 gpm. See log.
°E-48	Steve Hobeck	--	1950	165	12	52.0	--	--	T,B, 55	Irr	Casing: 165 feet, 8-inch pump set at 70 feet. Measured yield 500 gpm. Irrigates approximately 80 acres. Temp. 79° F.
E-49	H. C. Lewis	A & T Drilling Co.	1951	242	12¾	51.5	a/18.0	Jan. 16, 1952	T,B, 145	Irr	Casing: 242 feet, slotted 214 to 240 feet. Cemented well. Irrigates 80 acres. See log.
°E-50	L. L. Lawson	do.	1952	222	12¾	50.0	--	--	T,B, 60	Irr	Casing: 12¾-inch to 76 feet, 16-inch from 76 to 222 feet. Slotted from 166 to 178 feet and 208 to 220 feet. Cemented with 75 sacks of cement. Reported yield 2,000 gpm. Drawdown 54 feet. Irrigates 300 acres. See log.
°E-51	City of Harlingen	do.	1952	170	12¾	51.5	a/20.0	Apr. 29, 1952	T,B, 65	P	Casing: 174 feet, slotted from 159 to 169 feet. 3-stage pump set at 120 feet. Measured yield 846 gpm. Cemented with 60 sacks of cement. Temp. 78° F. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
E-52	C. L. Kaiegler	A & T Drilling Co.	1952	165	12¾	53.0	--	--	T,B, 65	Irr	Casing: 165 feet, slotted from 154 to 164 feet. Cemented with 60 sacks of cement. Cement plug 164 to 165 feet. Irrigates about 100 acres. See log.
*E-53	Mrs. J. A. Morgan	Herman Hamilton	1944	141	1¼	52.0	--	--	J,E, 1/3	D	Sand-point well.
*E-54	Dave Morgan	A & T Drilling Co.	1952	172	12¾	58.0	--	--	T,B, 50	Irr	Casing: 172 feet, slotted from 159 to 171 feet. Cemented with 60 sacks of cement. Measured yield 1,588 gpm. Irrigated 640 acres in 1952. Temp. 78° F. See log.
*E-55	Sid Berly	Adams Gardens Drilling Co.	1952	205	12	61.0	--	--	T,E, 75	Irr	Casing: 205 feet, slotted from 198 to 205 feet. Measured yield 1,005 gpm. One of 5 wells that irrigate 2,000 acres. See electric log, figure 4. Temp. 79° F.
*E-56	Bob Hall	A & T Drilling Co.	1952	160	12¾	54.0	--	--	T,E, 75	Irr	Casing: 160 feet, slotted from 152 to 159 feet. Measured yield 1,015 gpm. 3-stage pump set at 120 feet. Irrigates 100 acres. Temp. 78° F. See log.
*E-57	John Benson	do.	1947	162	12	58.0	a/19.0	Jan. 22, 1952	T,B, 75	Irr	Casing: 162 feet, slotted from 152 to 160 feet. Reported sand from 140 to 145 and coarse gravel 152 to 160 feet. Measured yield 891 gpm. Irrigates 100 acres. Temp. 80° F.
*E-58	H. C. Lewis	do.	1951	164	12¾	60.0	a/20.0	Jan. 17, 1952	T,B, 55	Irr	Casing: 164 feet, slotted from 153 to 161 feet. Irrigates 40 to 60 acres. Temp. 78° F. See log.
*E-59	A. J. Phillips	do.	1951	164	12¾	60.0	19.8	Jan. 18, 1952	T,B, 50	Irr	Casing: 164 feet, slotted from 149 to 160 feet. Measured yield 800 gpm. Drawdown 34 feet after 12 hours pumping. Irrigates 80 acres. Temp. 78° F.
*E-60	do.	Carl Junker	1939	149	2	58.0	a/17.0	July 20, 1945	J,E, ½	D,S	Casing: 149 feet, open end. Reported sand and gravel. Pump was lowered in 1952. Temp. 77° F.
E-61	I. F. Bauer	do.	--	152	2	59.0	--	--	J,E	D,S	Casing: 152 feet, open end.
E-62	B. J. Wolfe	do.	--	158	2	60.0	--	--	C,W	D,S	Casing: 158 feet, open end.
E-63	J. C. Dunn	--	1946	170	12	59.5	--	--	--	Irr	Casing: 170 feet, slotted in gravel; was used until 1948 then caved. Will be reworked.
*E-64	do.	--	Old	155	4	61.0	a/16.0	July 16, 1945	J,E, 1½	D,S	Casing: 140 feet. Pump set at 120 feet. Temp. 79° F.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*E-65	Cardell Gunn	A & T Drilling Co.	1952	167	12¾	64.5	19.5	June 18, 1952	T,B, 65	Irr	Casing: 167 feet, slotted from 158 to 165 feet. 3-stage pump set at 120 feet. Cemented with 60 sacks of cement. Measured yield 850 gpm. Irrigates 80 acres. See log.
*E-66	Paul Merten	Virdell Drilling Co.	1952	162	16	67.0	a/18.5	Sept. 30, 1952	T,B, 108	Irr	Casing: 162 feet, slotted from 143 to 159 feet. 3-stage, 14-inch bowl pump set at 140 feet. Gravel-packed. Measured yield 1,142 gpm. Irrigates 300 acres. Sells water.
E-67	Sid Berly	Adams Gardens Drilling Co.	1952	197	--	45.0	--	--	--	--	Irrigation test. See electric log, figure 2. See log.
*F-1	D. B. Meadows	D. B. Meadows	1951	16	--	41.0	14.0	Jan. 14, 1952	Cf,E, 5	Irr	A seep tank, 300 feet long, 50 feet wide and 16 feet deep. Can pump 12 hours then allow 12 hours for recovery. Irrigates 160 acres.
*F-2	Mrs. Doris Templeton	--	--	32	7	39.0	9.6	July 13, 1945	Cf,E, 5	P	Five wells. Reported yield 1,500 gallons per hour. 100 customers in town of Combes. Temp. 75° F.
*F-3	Jose Chavez, Jr.	Jose Chavez, Jr.	1952	40	1½	34.0	--	--	Cf,G, 55	Irr	Twelve sand-point wells connected to 3-inch suction pipe. Reported yield 250 gpm. Irrigates 10 acres. Temp. 77° F.
F-4	J. E. Strickland	--	1935	20	1¼	35.0	--	--	J,E, ½	D	Sand-point well.
*F-5	Pedro Chavez	Pedro Chavez	1952	40	1½	31.0	--	--	Cf,G, 20	Irr	Twelve sand-point wells, 3-inch suction 4-inch discharge. Reported yield 200 to 250 gpm. Irrigates 40 acres.
F-6	John Abbott	A & T Drilling Co.	1952	1,404	--	29.0	--	--	--	--	Irrigation test. See electric log, figure 2.
F-7	do.	do.	1952	257	--	29.0	--	--	--	--	Domestic test. Salty.
*F-8	U. S. Government	--	1944	1,012	--	36.0	--	--	--	--	Public supply test.
*F-9	Felix Puga	Felix Puga	1945	14	6	30.0	8.7	Aug. 5, 1945	H	D	Casing, open end. Temp. 77° F.
F-10	Guy Leggett	-- White	1941	26	2	37.0	--	--	C,W	D,S	
*F-11	G. A. Lovelace	--	Old	30	2	39.0	--	--	J,E	D,S	Sand-point well.
F-12	Food Machinery Corp.	A & T Drilling Co.	1946	1,237	--	39.0	--	--	--	--	Industrial test. See electric log, figure 2.
F-13	Mrs. O. L. Welch	Adams Gardens Drilling Co.	1952	248	--	32.0	--	--	--	--	Irrigation test. See electric log, figure 2.
F-14	-- Hulsey	Shell Oil Co.	1952	11,106	--	29.0	--	--	--	--	Oil test. See partial electric log, figure 2.
F-15	Al Parker	Goldrus Drilling Co.	1947	1,960	--	37.0	--	--	--	--	Oil test.
F-16	Southwest Packing Co.	A & T Drilling Co.	1947	300	--	40.0	--	--	--	--	Industrial test. See electric log, figure 3.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
F-17	Joe Garrett	-- Waldrep	1945	131	1¼	47.0	--	--	J,E, ½	D	Sand-point well.
*F-18	H. Horton	O. N. Gilliland	1945	223	1¼	48.0	a/18.0	July 18, 1945	C,H	D	Sand-point well. Temp. 76° F.
*F-19	T. J. Wallace	do.	Old	135	2	42.0	a/18.0	July 21, 1945	C,W	D,S	Sand-point well. Reported sand from 125 to 135 feet.
*F-20	C. E. Morgan	do.	1945	225	2	40.0	a/17.0	July 22, 1945	C,H	D,S	Casing: 225 feet, open end. Water from gravel. Temp. 76° F.
F-21	George W. Gamble	O. B. Martin	1952	439	--	37.0	--	--	--	--	Irrigation test. See electric log, figure 3.
*F-22	G. B. Smith	A & T Drilling Co.	1952	253	12	43.0	a/18.0	May 5, 1952	T,B, 85	Irr	Casing: 253 feet, slotted from 230 to 251 feet. 3-stage pump set at 120 feet. Reported yield 1,000 gpm. Irrigates 80 to 120 acres. See log.
*F-23	Tomas Pena	--	Old	160	1¼	45.0	--	--	C,W	D	Sand-point well. Temp. 77° F.
*F-24	O. W. Axtell	V. E. Morrow	1944	215	1¼	46.0	a/25.0	July 21, 1945	C,E	D	Casing: 215 feet, sand-point well. Sand and gravel reported from 210 to 215 feet. Temp. 76° F.
F-25	J. A. Alderdice	do.	1944	275	--	46.0	--	--	--	--	Domestic test. Reported gumbo clay. Dry.
F-26	H. A. Thieme	--	1923	10	120	49.0	4.5	July 29, 1945	Cf,E	D,S	Dug. Concrete casing. Reported yield 13 gpm.
*F-27	L. R. Mortesen	A & T Drilling Co.	1952	310	12¾	45.0	--	--	T,B, 65	Irr	Casing: 218 feet. Screen at 158-218 feet. 3-stage pump. Reported yield 675 gpm. Irrigates 80 to 100 acres. See electric log, figure 3.
F-28	W. D. Peters	V. E. Morrow	1945	200	--	44.0	--	--	--	--	Domestic test. Reported sand. Water insufficient.
F-29	Sunny Glen Home	--	Old	14	144	42.0	5.5	July 5, 1945	H	S	Dug. Casing: 14 feet of brick.
F-30	W. J. Woolem	Virdell Drilling Co.	1952	399	--	37.5	--	--	--	--	Irrigation test. See log.
F-31	Central Power & Light Co.	The Layne-Texas Co., Ltd.	1952	240	20	38.0	a/21.0	Oct. 16, 1952	T,E, 40	Ind	Casing: 153 feet of 20-inch. Screen at 153-238 feet. Cemented and gravel-walled. Measured yield 412 gpm.
F-32	do.	do.	1952	269	20	38.0	--	--	T,E, 40	Ind	Casing: 178 feet of 20-inch. Screen at 178 to 240 feet. Cemented and gravel-walled. Measured yield 450 gpm. Drawdown 80 feet. Electric log in files of State Board of Water Engineers.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
F-33	Central Power & Light Co.	The Layne-Texas Co., Ltd.	1952	230	20	38.0	--	--	T,E, 40	Ind	Casing: 164 feet of 20-inch. Screen at 164 to 228 feet. Cemented with 130 sacks of cement. Measured yield 536 gpm.
*F-34	Alexander Marketing Co.	A & T Drilling Co.	1948	322	12	39.0	a/15.0	Jan. 22, 1952	T,E, 30	Ind	Casing: 165 feet of 12-inch, 8 5/8-inch screen at 165-185 feet, and 200 to 230 feet. Uses 150,000 gallons a day during packing season. Electric log in files of State Board of Water Engineers.
*F-35	Ernest Long	Henry Cleveland	1952	171	20	27.5	8.3	June 26, 1952	T,B, 60	Irr	Casing: 171 feet, slotted from 100 to 170 feet. Gravel-packed. 3-stage pump. Reported yield 1,000 gpm. Measured drawdown 32 feet after 4 hours pumping. Irrigates 150 acres.
*F-36	Wilfred Mack	Bert Killenger	1952	180	12	27.0	9.4	June 25, 1952	T,B, 145	Irr	Casing: 180 feet, slotted from 37 to 180 feet. Reported yield 1,000 gpm. Irrigates 150 to 200 acres. Temp. 79° F.
F-37	Ernest Long	A & T Drilling Co.	1952	200	12	27.0	9.0	July 17, 1952	--	N	Casing: 150 feet, slotted - unknown. Well pumped 60 days then caved. Abandoned. See electric log, figure 3.
*F-38	M. H. Scaief	Tom Wilkinson	1952	198	12¾	29.0	--	--	T,B, 62	Irr	Casing: 198 feet, slotted from 156 to 196 feet. Reported yield 800 gpm. Irrigates 300 acres. See log.
*F-39	City of San Benito	Henry Cleveland	1952	226	20	33.0	11.0	June 19, 1952	T,E, 40	P	Casing: 169½ feet, slotted from 112 to 169 feet. Used as standby supply for city. See electric log, figure 3.
F-40	E. A. Daughtrey	Tom Wilkinson	1952	122	4	32.0	a/10.0	June 23, 1952	J,G, 90	Irr	Casing: 122 feet, slotted from 110 to 122 feet. Reported yield 400 gpm. Irrigates 10 acres. Water reported 2,412 gpm total solids.
*F-41	Mrs. Marguret Yost	O. N. Gilliland	1929	130	1¼	35.0	--	--	J,E	D	Casing: 130 feet. Sand-point well.
F-42	C. W. Hansen	V. E. Morrow	1945	230	--	44.0	--	--	--	--	Domestic test. No water-bearing strata found.
*F-43	E. Hartle	--	1935	136	2	45.0	5.2	Aug. 6, 1945	J,E, ¼	D	Casing: 136 feet. Sand-point well.
*F-44	D. H. Palmer	Virdell Drilling Co.	1952	166	12	49.0	17.7	Aug. 19, 1952	T,B, 75	Irr	Casing: 166 feet, slotted from 115 to 166 feet. Gravel-packed with 21 yards of gravel. 3-stage pump set at 120 feet. Irrigates 93 acres. Temp. 79° F. See log.
*F-45	V. E. Morrow	A & T Drilling Co.	1952	262	12¾	48.0	a/18.0	July 22, 1952	--	--	Casing: 262 feet, slotted from 250 to 260 feet. Pumped large amounts of lignite when brought in. Abandoned. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
F-46	Jack Garrett	A & T Drilling Co.	1952	394	12¾	49.0	18.9	July 24, 1952	T,B, 72	Irr	Casing: 12¾-inch to 184 feet, 9 5/8-inch screen at 184 to 259 feet. Cemented and plugged at 259 feet. Irrigates 190 acres. See electric log, figure 3.
F-47	V. E. Morrow	do.	1952	257	12¾	49.0	--	--	T,B, 72	Irr	Casing: 257 feet, slotted from 247 to 256 feet. Cemented. Reported yield 900 gpm. Irrigates 68 acres. Can irrigate 600 acres. Temp. 78° F.
F-48	C. S. Halbert	O. L. Waldrep	1943	160	3	49.0	8.7	July 10, 1952	--	--	Unused.
*F-49	O. L. Waldrep	do.	1943	155	1¼	54.0	--	--	J,E, ½	D	Casing: 155 feet open end. Reported gravel from 151 to 155 feet.
*F-50	B. F. Morrow	A & T Drilling Co.	1952	163	12¾	50.0	--	--	T,B, 72	Irr	Casing: 163 feet, slotted from 152 to 162 feet. Cemented with 60 sacks of cement. 5-stage pump set at 120 feet. Irrigates approximately 100 acres. See log.
*F-51	D. C. Hance	Morrow & Waldrep	1928	144	1¼	51.0	a/ 9.0	Aug. 6, 1945	C,W	D	Casing: 144 feet. Sand-point well. Reported water gravel 139 to 144 feet.
*F-52	M. D. Hance	A & T Drilling Co.	1948	176	12	50.0	a/15.0	Sept. 3, 1952	T,B, 60	Irr	Casing: 178 feet, slotted from 158 to 176 feet. Reported yield 750 gpm. Irrigates 250 acres.
*F-53	L. M. Mikkelsen	do.	1948	185	8	54.0	--	--	T,B, 55	Irr	Casing: 185 feet, slotted from 165 to 183 feet. Reported yield 600 gpm. Irrigates approximately 80 acres. Temp. 79° F.
*F-54	T. Oyama	Tom Wilkinson	1952	200	12	52.5	a/20.0	May 20, 1952	T,B, 145	Irr	Casing: 200 feet, slotted from 174 to 200 feet. 3-stage pump. Measured yield 1,000 gpm. Irrigates 250 acres. Temp. 77° F. See log.
*F-55	Ray McDonald	do.	1952	212	12	47.0	--	--	T,B, 65	Irr	Casing: 206 feet, slotted from 148 to 205 feet. Reported yield 850 gpm. Irrigates approximately 200 acres. See log.
F-56	Jim Perkins	--	Old	11	24	43.0	6.1	Aug. 2, 1952	J,E	D	Dug. Casing: 11 feet brick, open end. Temp. 77½° F.
F-57	G. W. McCain	Tom Wilkinson	1952	180	12¾	44.0	a/10.0	May 5, 1952	T,E, 75	Irr	Casing: 180 feet, slotted from 110 to 180 feet. 3-stage pump. Not cemented. This well and wells no. F-61 and F-62 irrigate 420 acres. See log.
F-58	do.	--	1922	18	12	44.0	a/14.0	Aug. 2, 1945	J,E	D	Casing: 18 feet tile, open end. Never failed. Temp. 76° F.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*F-59	John Kuhar	O. N. Gilliland	1951	150	4	41.0	--	--	Cf,G, 10	Irr	Casing: 150 feet, slotted in gravel. Irrigates 25 acres. Temp. 77½° F.
*F-60	Joe M. Spear	Tom Wilkinson	1952	162	4	45.0	21.3	July 22, 1952	J,E, 5	Irr	Casing: 162 feet, slotted. Irrigates 30 acres. Reported yield 500 gpm.
*F-61	G. W. McCain	do.	1952	386	12	46.0	a/19.0	May 5, 1952	T,E, 75	Irr	Casing: 385 feet, slotted from 136 to 152 feet and 320 to 385 feet. 3-stage pump. Not cemented. Reported yield 1,750 gpm. See log.
*F-62	do.	A & T Drilling Co.	1948	381	12¾	45.0	--	--	T,B, 54	Irr	Casing: 310 feet, slotted from 230 to 260 feet, and 290 to 310 feet. Cemented with 200 sacks of cement. 3-stage pump. Reported yield 450 gpm. Electric log in files of State Board of Water Engineers.
*F-63	George W. Gamble	do.	1948	464	14	46.0	a/22.0	1948	T,B, 54	Irr	Casing: 328 feet, slotted from 213 to 242 feet, and 268 to 328 feet. Cemented. Irrigates 80 acres and sells water. See electric log, figure 3. Temp. 79° F.
*F-64	E. J. Johnson	O. N. Gilliland	1940	57	3	51.0	12.5	Aug. 2, 1945	C,W	D	Casing: 57 feet. Sand-point well. Temp. 76° F.
*F-65	L. A. Perkins	Waldrep & Hamilton	1944	136	1¼	50.0	a/15.0	do.	C,W	D	Casing: 136 feet. Sand-point well. Temp. 78° F.
F-66	Highland School	Peter Christensen	1940	305	--	48.0	a/ 8.0	--	Cf,E, 1/3	P	Reported water gravel 300 to 305 feet.
*F-67	M. T. Rodriquez	--	Old	70	1¼	48.0	--	--	J,E, ¼	D,S	Casing: 70 feet. Sand-point well.
F-68	T. Kawamara	Tom Wilkinson	1952	346	12	52.0	--	--	T,B, 55	Irr	Casing: 346 feet, slotted from 287 to 346 feet. 3-stage pump. Well was first drilled to 211 feet, but did not produce, deepened to 346 feet. Not cemented. See log.
F-69	George Oyama	do.	1952	235	12	53.0	--	--	T,B, 65	Irr	Casing: 235 feet, slotted from 190 to 235 feet. 3-stage pump. Irrigates 110 acres.
*F-70	L. M. Mikklesen	--	Old	190	2	50.0	a/30.0	May 21, 1952	J,E, 1	D	Casing: 190 feet, open end. Temp. 78° F.
*F-71	do.	A & T Drilling Co.	1948	180	8	48.0	--	--	T,B, 55	Irr	Casing: 180 feet, slotted from 168 to 180 feet. 3-stage pump. Reported yield 800 gpm. Irrigates 100 acres. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
F-72	Brown & Slaughter	Tom Wilkinson	1952	184	14	52.0	--	--	T,B, 65	Irr	Casing: 14-inch to 110 feet, 12-inch to 184 feet, slotted from 110 to 184 feet. 3-stage pump. Irrigates 60 acres. See log.
F-73	Rangerville School	Otto Walk	1939	160	1¼	53.0	--	--	J,E	P	Casing: 160 feet. Sand-point well.
*F-74	S. Oyama	Tom Wilkinson	1952	206	12	55.0	a/18.0	May 20, 1952	T,B, 145	Irr	Casing: 206 feet, slotted from 155 to 204 feet. 3-stage pump set at 120 feet. Irrigates 100 acres. Temp. 79° F. See log.
*F-75	T. Date	do.	1952	200	12	52.0	--	--	T,B, 75	Irr	Casing: 200 feet, slotted from 140 to 200 feet. Irrigates approximately 100 acres. Temp. 79° F. See log.
F-76	Kenneth Shimotsu	do.	1952	208	12¾	53.0	--	--	T,B, 145	Irr	Casing: 208 feet, slotted from 181 to 208 feet. 3-stage pump. Irrigates approximately 80 acres. See log.
*F-77	do.	do.	1952	203	12	50.0	--	--	T,B, 145	Irr	Casing: 203 feet, slotted from 158 to 198 feet. Bottomed in clay. 3-stage pump. Measured yield 966 gpm. Irrigates 200 acres. Temp. 79° F.
*F-78	Louis Stanley	Henry Cleveland	1952	174	12	43.0	a/27.0	May 8, 1952	T,E, 75	Irr	Casing: 174 feet, slotted from 161 to 174 feet. Measured yield 700 gpm. Drawdown 54.5 feet after 120 hours pumping. Irrigates 80 acres. See log.
F-79	do.	Hugh Cole	1948	247	--	43.0	a/ 7.0	1948	--	--	Irrigation test. Private analysis shows 1,140 ppm chloride at 241 feet; 750 ppm chloride at 164 feet. See electric log, figure 3.
*F-80	George Oyama	Tom Wilkinson	1952	201	12¾	53.0	26.4	June 25, 1952	T,B, 145	Irr	Casing: 201 feet, slotted from 166 to 197 feet. 3-stage pump. Measured yield 994 gpm. Irrigates 60 acres. Temp. 78° F. See log.
F-81	Herman Johnson	do.	1952	194	12	51.5	22.1	do.	T,B, 65	Irr	Casing: 194 feet, slotted from 150 to 192 feet. 3-stage pump. Reported yield 800 gpm. Irrigates approximately 60 acres. See log.
*F-82	T. J. Thomas	--	1935	25	24	54.0	10.6	Aug. 2, 1945	H	D,S	Concrete casing. Temp. 77° F.
*F-83	Oscar Thiems	A & T Drilling Co.	1952	168	12¾	51.0	--	--	T,E, 50	Irr	Casing: 168 feet, slotted from 158 to 168 feet. Cemented with 60 sacks of cement. Measured yield 886 gpm. Temp. 79° F. See log.
F-84	Tom Casey	Henry Cleveland	1952	206	12	28.0	6.9	June 23, 1952	--	Irr	Casing: 163 feet, slotted from 130 to 160 feet, plugged at 163 feet. Not used. See electric log, figure 3.
F-85	Charles Barber	Tom Wilkinson	1952	332	--	41.5	--	--	--	--	Irrigation test. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
G-1	Las Yescas School	Peter Christensen	--	175	--	15.0	--	--	--	--	Test. Salty.
*G-2	Heaton & Calloway	A & T Drilling Co.	1952	382	--	28.0	--	--	--	--	Irrigation test. San Jose Ranch. See electric log, figure 3.
G-3	do.	Adams Gardens Drilling Co.	1952	127	12	28.0	a/ 9.0	July 3, 1952	T,G, 55	Irr	Casing: 127 feet, slotted from 119 to 127 feet. Reported yield 600 gpm. Mixes this water with drainage and river water.
G-4	John Walsdorf	Henry Crockett	1935	175	--	26.0	--	--	--	--	Test. Dry.
*G-5	August Pfieffer	--	--	30	24	24.0	--	--	H	D	Dug.
G-6	Frank Russell	A & T Drilling Co.	1947	275	8	40.0	a/10.0	Jan. 9, 1952	--	--	Not in use. Drilled for use in swimming pool and lawn. See electric log, figure 3.
G-7	Cleve Tandy	do.	1952	50	--	35.0	--	--	--	--	Test for irrigation. Salty.
G-8	do.	do.	1952	40	--	32.0	--	--	--	--	Do.
H-1	Cramer-Thompson	do.	1952	1,999	--	19.0	--	--	--	--	Irrigation test. Salty. See electric log, figure 2.
H-2	Lon C. Hill	--	Old	20	2	10.0	--	--	--	--	Casing: 20 feet. Sand-point well. Not in use.
H-3	Mrs. I. Y. Garcia	The Texas Co.	1950	9,828	--	6.0	--	--	--	--	Oil test. See electric log, figure 3.
*J-1	Santa Maria Independent School District	Carl Junker	1931	161	6	66.0	a/22.0	--	Cf,E, --	P	Casing: 161 feet, open end. Temp. 81° F.
J-2	J. C. Dunn	A & T Drilling Co.	1946	387	12	59.0	19.7	Jan. 15, 1952	T	Irr	Not used for past 3 years. See electric log, figure 4.
*J-3	H. C. Lewis	do.	1950	159	12¾	58.0	a/18.0	Jan. 17, 1952	T,G, 75	Irr	Casing: 159 feet, slotted from 140 to 157 feet. Reported yield 1,200 gpm. Irrigates 40 acres. Temp. 80° F.
*J-4	do.	do.	1951	167	12¾	60.0	--	--	T,B, 55	Irr	Casing: 167 feet, slotted from 158 to 166 feet. 3-stage pump set at 120 feet. Cemented. Irrigates 60 acres. Temp. 79° F. See log.
*J-5	John Benson	Tom Wilkinson	1949	174	12	60.0	27.7	Sept. 2, 1952	T,B, 90	Irr	Casing: 174 feet, slotted from 152 to 170 feet. Not cemented. Measured yield 1,008 gpm. Irrigates 140 acres. Temp. 78° F.
J-6	Reyes Rodriquez	Bert Killinger	1948	170	12	57.0	--	--	T,B, 40	Irr	Casing: 170 feet, slotted from 110 to 170 feet. 3-stage pump. Irrigates 80 acres.
*J-7	Cook & Hervey	Henry Cleveland	1952	180	20	60.0	--	--	T,B, 60	Irr	Casing: 180 feet, slotted from 150 to 180 feet. Measured yield 1,199 gpm. Temp. 79° F.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
*J-8	Leo Smith	A & T Drilling Co.	1952	172	12¾	54.0	a/20.0	Aug. 28, 1952	T,B, 145	Irr	Casing: 172 feet, slotted from 162 to 171 feet. Cemented with 60 sacks of cement. Irrigates 48 acres and sells water. Temp. 77½° F. See log.
J-9	E. C. Weber	Gene Liberty	1952	160	12	57.0	--	--	T,B, 65	Irr	Casing: 160 feet, slotted from 148 to 160 feet. Reported large gravel 148 to 160 feet. Reported yield 1,000 gpm. See log.
*J-10	H. C. Lewis	A & T Drilling Co.	1951	165	12¾	62.0	a/18.0	Feb. 20, 1952	T,B, 55	Irr	Casing: 165 feet, slotted from 142 to 164 feet. Cemented. Reported yield 800 gpm. Irrigates 60 acres. Temp. 78° F.
*J-11	L. A. Kerr	Carl Junker	1942	156	2	65.0	15.7	July 9, 1945	J,E	D,S	Casing: 156 feet. Reported gravel from 153 to 156 feet. Temp. 78° F.
*J-12	J. C. Dunn	Bob Johnson	1946	180	8	65.0	24.0	June 5, 1952	T,E, 20	Irr	Casing: 180 feet, slotted from 140 to 180 feet. 2-stage pump set at 100 feet. Measured yield 731 gpm. Drawdown 44 feet after 12 hours pumping. Irrigates 165 acres.
*J-13	do.	--	--	10	60	64.0	7.0	July 27, 1945	H	D	Dug.
*J-14	Mrs. M. A. Reed	Otto Walk	1945	145	4	67.0	16.6	July 2, 1943	J,E, ¼	D,S	Casing: 154 feet, open end. See log.
*J-15	Vick Peters	do.	1945	135	2	65.0	--	--	C,W	S	Casing: 135 feet, slotted from 132 to 135 feet. Temp. 76° F. See log.
*J-16	Dale Mock	M. A. Parker	1952	172	10	63.0	a/11.7	Oct. 30, 1952	T,B, 72	Irr	Casing: 172 feet, slotted from 145 to 170 feet. Cemented. 5-stage pump set at 120 feet. Reported yield 500 gpm. Irrigates 60 acres. Temp. 78° F.
*J-17	A. E. Matz	Adams Gardens Drilling Co.	1952	151	12	65.0	21.3	Aug. 28, 1952	T,G, 55	Irr	Casing: 151 feet, slotted from 137 to 149 feet. Reported yield 900 gpm. Irrigates 106 acres. See electric log, figure 4. Temp. 79° F.
*J-18	John Benson	Tom Wilkinson	1952	187	16	65.0	--	--	T,B, 75	Irr	Casing: 187 feet, slotted from 152 to 187 feet. Measured yield 905 gpm. Irrigates 80 acres. Temp. 78° F. See log.
J-19	Jesus Garcia	do.	1952	185	8	65.0	--	--	T,G, 55	Irr	Casing: 185 feet, slotted from 152 to 185 feet. Not cemented. Irrigates 60 acres. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
*J-20	F. J. Anderson	O. N. Gilliland	1941	110	1½	58.0	--	--	C,W	D	Casing: 110 feet, open end.
*J-21	J. Tanamachi	--	1940	139	2	57.0	a/20.0	Apr. 17, 1941	C,W	D,S	Casing: 139 feet, open end.
J-22	J. E. Gerusa	A & T Drilling Co.	1952	161	12¾	59.0	--	--	T,B, 55	Irr	Casing: 161 feet, slotted from 150 to 160 feet. Cemented with 75 sacks of cement. 3-stage pump set at 120 feet. Irrigates 80 acres. See log.
J-23	Juan B. Garcia	Tom Wilkinson	1952	200	12	58.0	--	--	T,B, 145	Irr	Casing: 200 feet, slotted from 140 to 198 feet. Not cemented. Irrigates 60 acres. See log.
*J-24	San Benito Water District	--	1935	160	2	58.0	--	--	C,G	D	Casing: 160 feet. Sandpoint well.
J-25	Santiago Gomez	Tom Wilkinson	1952	201	12	65.0	24.2	Jan. 5, 1953	T,G, 55	Irr	Casing: 201 feet, slotted from 151 to 201 feet. 3-stage pump. Not cemented. Irrigates 80 to 100 acres. See log.
*K-1	Emil Kaufman	Waldrep & Morrow	1944	151	3	51.0	a/ 6.0	Aug. 2, 1945	J,E, ¼	D,S	Casing: 151 feet, open end. Reported gravel from 145 to 151 feet. Temp. 77½° F.
*K-2	Cecil Graham	O. N. Gilliland	1945	150	3	45.0	--	--	J,E, ¼	D,S	Casing: 150 feet. Sandpoint well.
*K-3	L. C. Poth	A & T Drilling Co.	1948	474	14	47.5	a/18.0	May 6, 1952	T,G, 55	Irr	Casing: 290 feet, slotted from 155 to 290 feet. Cemented. Irrigated approximately 200 acres. Well cratered in 1952 - dropped casing 9 feet. Abandoned. See electric log, figure 4. Temp. 78° F.
*K-4	F. H. Wilson	Hugh Cole	1949	177	2	47.0	a/13.0	Mar. 1952	J,E, 1½	D	Casing: 177 feet, slotted from 165 to 177 feet. Temp. 78° F.
*K-5	do.	A & T Drilling Co.	1952	185	12	47.9	a/20.0	June 25, 1952	T,B, 65	Irr	Casing: 185 feet, slotted from 176 to 184 feet. 3-stage, 10-inch bowl pump set at 120 feet. Irrigates 79 acres. Temp. 78° F. See log.
*K-6	Pilar Cabrera	Henry Cleveland	1952	303	20	49.0	--	--	T,B, 97	Irr	Casing: 303 feet, slotted from 160 to 303 feet. 3-stage, 14-inch bowl pump set at 150 feet. Gravel-packed. Irrigates 320 acres. Temp. 78° F. Electric log in files of State Board of Water Engineers.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level: Below land surface datum (ft.)	Water level: Date of measurement	Method of lift	Use of water	Remarks
*K-7	Barreda Estate	Tom Wilkinson	1952	235	12	52.0	27.0	Sept. 2, 1952	T, B, 70	Irr	Casing: 235 feet, slotted from 200 to 235 feet. Reported sand and gravel 175 to 235 feet. Irrigates approximately 80 acres.
*K-8	J. G. Ballinger	A & T Drilling Co.	1952	204	14	34.0	--	--	T, E, 75	Irr	Casing: 204 feet, slotted from 160 to 204 feet. Measured yield 2,097 gpm. Irrigates 200 to 300 acres. Temp. 78° F. See log.
*K-9	Reynaldo Santiso	Tom Wilkinson	1949	207	14	34.5	--	--	T, B, 159	Irr	Casing: 204 feet, slotted from 158 to 200 feet. 3-stage pump. Not cemented. Measured yield 900 gpm. Irrigates approximately 60 acres. Temp. 79° F.
*K-10	G. B. Smith	A & T Drilling Co.	1952	174	16	47.0	a/20.0	May 5, 1952	T, E, 50	Irr	Casing: 174 feet, slotted from 150 to 171 feet. Cemented. 3-stage pump set at 120 feet. Reported yield 950 gpm. Irrigates 296 acres. Temp. 78° F. See log.
*K-11	O. W. Tucker	Tom Wilkinson	1952	200	12	44.5	18.9	Sept. 4, 1952	T, B, 60	Irr	Casing: 200 feet, slotted from 140 to 198 feet. Measured yield 770 gpm. Temp. 78.8° F. See log.
*K-12	Bert Crawford	O. B. Martin	1952	184	12	45.0	--	--	T, B, 65	Irr	Casing: 184 feet, slotted from 145 to 178 feet. Reported large gravel 145 to 178 feet. Irrigates 313 acres.
K-13	Mrs. -- Coakley	Tom Wilkinson	1952	199	12	45.0	14.1	Jan. 5, 1953	--	Irr	Casing: 199 feet, slotted from 150 to 197 feet. Will irrigate 200 acres. See log.
K-14	M. de los Santos	do.	1952	184	12	48.5	--	--	T, B, 65	Irr	Casing: 184 feet, slotted from 145 to 182 feet. Irrigates 100 acres. See log.
K-15	Tom Tanamachi	Gene Liberty	1952	160	12	55.0	--	--	T, B, 145	Irr	Casing: 160 feet, slotted from 142 to 160 feet. Cemented. Reported yield 900 gpm. Irrigates approximately 80 acres.
*K-16	Ricardo Aquilar	Tom Wilkinson	1952	174	12	55.0	--	--	T, G, 50	Irr	Casing: 174 feet, slotted from 149 to 172 feet. Measured yield 560 gpm. Irrigates 50 acres. Temp. 79° F.
K-17	Steve Galloway	Gene Liberty	1952	160	12	55.0	a/18.0	Oct. 14, 1952	T, G, 50	Irr	Casing: 160 feet, slotted from 142 to 160 feet. Estimated yield 650 gpm. Irrigates 150 to 200 acres.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*K-18	Mrs. A. D. Dickinson	A & T Drilling Co.	1952	173	12¾	57.5	--	--	T,B, 72	Irr	Casing: 173 feet, slotted from 164 to 172 feet. Cemented with 60 sacks of cement. 3-stage pump set at 120 feet. Measured yield 868 gpm. Irrigates 100 acres. Temp. 79° F. See log.
*K-19	Eugene Kaufman	--	1925	140	3	50.0	10.0	Aug. 3, 1945	J,E	D,S	Casing: 140 feet.
*K-20	W. H. Glidewell	O. N. Gilliland	1944	171	1¼	56.0	a/14.0	do.	C,W	D,S	Casing: 171 feet. Sandpoint well.
K-21	Jack Garrett	A & T Drilling Co.	1952	306	--	47.0	--	--	--	--	Irrigation test. See electric log, figure 4.
*K-22	Landrum School	Waldrep & Morrow	1940	135	1¼	51.0	--	--	J,E	P	Casing: 135 feet.
*K-23	La Paloma School	--	1939	150	2	46.0	--	--	J,E	P	Casing: 150 feet. Sandpoint well.
*K-24	H. D. Smith	O. N. Gilliland	1944	170	1½	48.0	--	--	C,H	D	Temp. 80° F.
K-25	Jose Escamilla	Henry Cleveland	1952	295	20	49.0	--	--	T,B, 85	Irr	Casing: 295 feet, slotted from 164 to 295 feet. Irrigates 200 acres.
K-26	M. F. Martina	--	1945	40	3	49.0	--	--	H	--	Salty.
*K-27	Carlos Zepeda	Henry Cleveland	1952	275	12	48.0	--	--	T,E, 50	Irr	Casing: 275 feet, slotted from 173 to 274 feet. Cemented. Reported yield 850 gpm. Irrigates 120 acres. Temp. 78° F. See electric log, figure 4.
*K-28	Encantada School	--	1934	150	--	47.0	a/18.0	1941	J,E	P	
*K-29	Valley Christian Encampment	A & T Drilling Co.	--	270	8	34.5	--	--	T,E, 15	P,D	Casing: 270 feet, screened at 200 to 270 feet. Temp. 78° F.
K-30	-- McCamy	do.	1946	280	12¾	39.0	--	--	T,E, 25	Irr	Casing: 280 feet, slotted from 260 to 280 feet. 5-stage pump. Irrigates 70 acres.
*K-31	Ben Benson	Tom Wilkinson	1950	290	14	39.0	a/18.0	June 16, 1952	T,B, 55	Irr	Casing: 290 feet, slotted from 278 to 290 feet. Measured yield 847 gpm. Irrigates approximately 200 acres. Temp. 78° F.
*K-32	L. T. Boswell	Fred Fielder	1948	279	8	37.0	--	--	--	--	Abandoned irrigation well. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
*K-33	Ben Benson	A & T Drilling Co.	1950	300	14	40.0	a/20.0	June 11, 1952	T,B	Irr	Casing: 284 feet, slotted from 227 to 282 feet. Cemented. 3-stage pump. Measured yield 868 gpm. Irrigates approximately 100 acres. Temp. 78° F. See log.
*K-34	J. T. Canales	Fred Fielder	1949	302	10¾	45.0	--	--	T,B, 65	Irr	Casing: 194 feet of 10¾-inch, 8-inch slotted casing from 194 to 302 feet. Cemented. Irrigates 40 acres. See log.
*K-35	do.	Luis Tamez	1949	250	10	43.0	--	--	T,B, 65	Irr	Casing: 154 feet of 10-inch, 8-inch slotted casing from 154 to 250 feet. 3-stage pump set at 100 feet. Irrigates 40 acres. See log.
*K-36	L. T. Boswell	Fred Fielder	1948	286	8	42.0	--	--	T,-	N	Casing: 160 feet of 8-inch, 6-inch from 160 to 286 feet. Slotted from 160 to 190 feet, and 237 to 286 feet. Abandoned.
*K-37	do.	A & T Drilling Co.	1947	345	12¾	43.0	--	--	T,B, 145	Irr	Irrigates approximately 100 acres. See electric log, figure 4. Temp. 79° F.
*K-38	Pilar Cabrera	Tom Wilkinson	1948	286	16	42.0	23.7	June 26, 1952	T,B, 135	Irr	Casing: 286 feet, slotted from 230 to 286 feet. Reported yield 900 gpm. Irrigates 186 acres. Temp. 80° F.
K-39	Mrs. Raul Tijerina	Luis Tamez	1949	310	10¾	44.0	--	--	T,B	Irr	Casing: 194 feet of 10¾-inch, 8-inch casing 194 to 310 feet. Slotted from 194 to 310 feet. Irrigates 40 to 60 acres.
*K-40	J. T. Canales	do.	1949	275	10	45.0	--	--	T,B, 65	Irr	Casing: 175 feet of 10-inch, 8-inch casing 175 to 274 feet. Slotted from 175 to 274 feet. Cemented with 75 sacks of cement. 3-stage pump set at 110 feet. Irrigates 40 acres.
*K-41	Carlos Watson	A & T Drilling Co.	1951	276	12¾	41.0	24.5	Aug. 20, 1952	T,B, 65	Irr	Casing: 274 feet, slotted from 248 to 273 feet. Estimated yield 900 gpm. Temp. 78° F. See log.
*K-42	do.	Raul Tijerina	1950	220	10	40.0	21.0	do.	T,B, 60	Irr	Casing: 220 feet, slotted from 200 to 220 feet. Irrigates 315 acres. Temp. 79° F.
*K-43	Raul Lopez	Tom Wilkinson	1950	275	14	39.5	--	--	T,B	Irr	Casing: 275 feet, slotted from 190 to 220 feet, and 230 to 273 feet. Reported yield 1,000 gpm. Irrigates 150 acres. Temp. 79° F.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
°K-44	Mrs. J. T. Canales	Luis Tamez	1949	240	10¾	44.0	--	--	T,B	Irr	Casing: 184 feet of 10¾-inch, 8-inch casing 184 to 239 feet. Slotted from 184 to 239 feet. Cemented with 75 sacks of cement. Irrigates 40 acres.
K-45	Raul Lopez	A & T Drilling Co.	1947	268	8	39.0	a/22.0	June 18, 1952	T,B, 65	Irr	Casing: 265 feet. Screens at 190 to 230 feet, and 240 to 265 feet. 3-stage pump set at 120 feet. Irrigates 100 acres. See log.
K-46	Charles Russell	Virdell Drilling Co.	1952	237	12¾	42.5	--	--	T,B, 145	N	Casing: 237 feet, slotted from 195 to 235 feet. Well pumped 650 yards of sand by measurement. Cratered and abandoned. See log.
°K-47	J. T. Canales	Fred Fielder	1950	328	8	44.0	--	--	T,B	Irr	Casing: 196 feet of 8-inch, 5½-inch casing from 196 to 328 feet. Slotted from 196 to 230 feet, and 274 to 328 feet. Irrigates 40 acres. See log.
°K-48	Villa Nueva School	--	1939	192	1¼	44.0	a/18.0	1941	J,E	P	Water reported in fine-grained sand.
°K-49	Jose Vesterro	O. N. Gilliland	1945	206	1¼	44.0	--	--	C,W	D	Casing: 206 feet, open end. Temp. 79° F.
°K-50	Jesus Costellano	Raul Tijerina	1949	280	8	40.5	--	--	T,E, 40	Irr	Casing: 280 feet, slotted from 240 to 280 feet. Reported yield 600 gpm. Irrigates approximately 214 acres. Temp. 80° F.
L-1	-- Hershberger	O. N. Gilliland	1943	108	10	39.0	21.1	Aug. 10, 1945	--	--	Not used.
°L-2	F. Y. Wingate	do.	1943	164	6	38.0	34.9	do.	C,E, 1/3	D,Irr	Casing: 164 feet, slotted from 160 to 164 feet. Water level reported 15 feet when drilled. Drawdown 15 feet after 10 minutes pumping 10 gpm.
°L-3	Continental Pipeline Co.	--	1937	65	1½	33.0	--	--	J,E	D	Casing: 65 feet. Sand-point well.
°L-4	L. F. Wilkinson	Tom Wilkinson	1949	170	12	33.0	14.4	July 22, 1952	T,G, 55	Irr	Casing: 170 feet. Commercial analysis reported 4,480 ppm total dissolved solids. Irrigates approximately 90 acres.
°L-5	Hall Palmer	Adams Gardens Drilling Co.	1952	268	--	34.0	--	--	T,B, 75	Irr	Casing: 196 feet, slotted from 178 to 196 feet. Plugged at 200 feet. Cemented with 100 sacks of cement. 3-stage pump set at 130 feet. See electric log, figure 3.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
L-6	L. F. Wilkinson	--	Old	40	2	31.0	--	--	C,W	S	Casing: 40 feet. Sand-point well. Reported salty.
*L-7	John Prentiss	Tom Wilkinson	1952	173	4	36.5	a/20.0	July 8, 1952	J,G, 40	Irr	Casing: 170 feet, slotted from 158 to 170 feet. Reported yield 350 gpm. Irrigates 20 acres. Temp. 79° F.
L-8	L. F. Wilkinson	do.	1949	240	12	30.0	--	--	--	--	Casing: 240 feet. Cemented. Reported never able to pump enough water for irrigation purposes.
*L-9	do.	Otto Walk	1950	300	2	30.0	a/ 8.0	July 21, 1952	J,E, 1½	D,S	Casing: 300 feet. Sand-point well. Temp. 79° F.
L-10	A. H. Fernandez	Adams Gardens Drilling Co.	1952	205	12	35.0	--	--	T,B, 65	N	Casing: 186 feet, slotted from 176 to 185 feet. Well failed to produce after 48 hours pumping and acidation. Abandoned. See electric log, figure 4.
*L-11	do.	Tom Wilkinson	1952	302	12	35.0	--	--	T,B, 65	Irr	Casing: 302 feet, slotted from 244 to 299 feet. Measured yield 696 gpm. Irrigates 200 to 300 acres. Temp. 79° F. See log.
L-12	Pilar Cabrera	do.	1952	203	12	35.0	18.9	Oct. 14, 1952	T,B, 65	Irr	Casing: 203 feet, slotted from 175 to 203 feet. Irrigates 70 acres.
*L-13	Balbino Rego	do.	1952	311	16	35.0	23.4	June 17, 1952	T,B, 159	Irr	Casing: 311 feet, slotted from 265 to 311 feet. Yield 1,045 gpm. Irrigates 490 acres. Temp. 78° F. See log.
*L-14	R. Grand-Lienard	A & T Drilling Co.	1951	313	12¾	38.0	--	--	T,E, 50	Irr	Casing: 280 feet, slotted from 203 to 280 feet. Reported yield 700 gpm. Irrigates 80 to 100 acres. See electric log, figure 4.
*L-15	R. O. Thuem	Tom Wilkinson	1949	296	12	39.0	--	--	T,B, 159	Irr	Casing: 296 feet, slotted from 260 to 294 feet. Irrigates 110 acres. Temp. 80° F.
L-16	A. H. Fernandez	Adams Gardens Drilling Co.	1952	174	12¾	35.0	24.0	July 8, 1952	T,E, 75	N	Casing: 174 feet, slotted from 160 to 174 feet. Pumped 30 days; water became too salty for irrigation use. See electric log, figure 4.
L-17	Ricos Valentine	--	--	40	2	17.0	--	--	C,W	S	Very salty.
L-18	Jarge Velez	A & T Drilling Co.	1948	598	--	20.0	--	--	--	--	Irrigation test. See electric log, figure 4.
*L-19	E. E. Wilson	-	1944	14	--	30.0	--	--	J,E	D	Casing: 14 feet.
*L-20	A. H. Fernandez	A & T Drilling Co.	1951	230	14	38.0	a/20.0	June 24, 1952	T,B	Irr	Casing: 230 feet, slotted from 208 to 228 feet. Cemented. Reported yield 1,100 gpm. Irrigates approximately 300 acres. See log.
L-21	do.	do.	1951	305	--	41.0	--	--	--	--	Irrigation test. See log.

Table 3.- Records of wells in Cameron County--Continued

Well	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Altitude of land surface datum (ft.)	Water level		Method of lift	Use of water	Remarks
							Below land surface datum (ft.)	Date of measurement			
L-22	Mrs. Alice Mayer	Tom Wilkinson	1951	245	12¾	38.0	17.2	Aug. 19, 1952	T,B, 97	Irr	Casing: 245 feet, slotted from 210 to 245 feet. Irrigates 205 acres. Reported 760 ppm total dissolved solids. See log.
°L-23	Geo. H. Bingley	A & T Drilling Co.	1952	190	12¾	33.0	12.5	Aug. 28, 1952	T,B, 145	Irr	Casing: 190 feet, slotted from 182 to 189 feet. Cemented with 75 sacks of cement. Irrigates approximately 100 acres. Temp. 79° F. See log.
°L-24	M. G. Ortiz	--	1929	165	3	22.0	--	--	J,E	D,S	Casing: 155 feet, open end. Temp. 78° F.
°L-25	H. B. Fleming	O. N. Gilliland	1945	204	4	29.0	8.8	Sept. 2, 1945	J,E	D,S	Casing: 204 feet, open end. See log.
°L-26	B. Castro	do.	1943	212	1¼	28.0	--	--	C,W	D	Casing: 212 feet, open end.
L-27	-- Fleming	Ted Pursley	1946	211	10	28.0	--	--	--	--	Casing: 211 feet, slotted from 198 to 211 feet. Drilled for irrigation, never used. See log.
L-28	P. J. Davis	The Texas Co.	1950	12,053	--	33.0	--	--	--	--	Oil test. See partial electric log, figure 4.
°L-29	City of Brownsville	Texas Water Supply Corp.	1952	200	20	35.0	a/14.0	July 1, 1952	T,E, 75	P	Casing: 170 feet of 20-inch, 12-inch screen from 170 to 198 feet. Gravel-walled, and cemented. Reported yield 900 gpm. Electric log in files of State Board of Water Engineers.
°L-30	do.	do.	1952	203	20	34.0	14.3	Oct. 23, 1952	T,E, 75	P	Casing: 150 feet of 20-inch, 12-inch screen at 106 to 132 feet; 140 to 150 feet; 168 to 196 feet. Reported yield 1,000 gpm. See electric log, figure 4.
°L-31	A. Longoria	A. Longoria	1940	40	1¼	37.0	--	--	C,W	S	Casing: 40 feet, open end. Water in sand and gravel.
L-32	City of Brownsville	Texas Water Supply Corp.	1952	503	--	38.0	--	--	--	--	Public supply test. See electric log, figure 4. See log.
M-1	G. Newberry	Pure Oil Co.	1939	8,160	--	5.0	--	--	--	--	Oil test. See partial electric log, figure 4.
N-1	do.	do.	1942	1,880	--	6.0	--	--	--	--	Oil test. See electric log, figure 3.
°N-2	R. E. McCaslin	R. E. McCaslin	1948	5	24	9.0	3.0	Jan. 7, 1952	H	D	Dug. Casing: 5 feet wood. Water from wind-blown sand dunes. Yield approximately 10 gallons per hour.
N-3	Holmes Drilling Co.	Ted Pursley	1951	412	--	2.0	--	--	--	--	Test for oil rig boiler water. See log.
P-1	City of Brownsville	Texas Water Supply Corp.	1952	300	--	--	--	--	--	--	Public supply test. Electric log in files of State Board of Water Engineers.

a/ Reported by owner or driller.
b/ Altitude estimated from U. S. Geological Survey topographic maps, contour interval 1 foot.
c/ Duty of water not determined.
° For chemical analyses, see table 5.

Table 4.- Drillers' logs of wells in Cameron County, Texas

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well A-1					
Owner: W. A. Stohl. Driller: Ted Pursley.					
Surface soil	3	3	Sand	81	180
Caliche, shaly	12	15	Shale, streaky	104	284
Sand	29	44	Sand	82	366
Shale, streaky	42	86	Shale	1	367
Shale, sandy	13	99			
Well A-3					
Owner: W. A Stohl. Driller: Ted Pursley.					
Surface soil	3	3	Sand	84	182
Caliche, shaly	11	14	Shale, sticky	88	270
Sand	32	46	Sand	84	354
Shale, sticky	39	85	Shale	7	361
Shale, sandy	13	98			
Well A-12					
Owner: M. W. Nelson. Driller: Ted Pursley.					
Surface soil	3	3	Shale	19	93
Caliche	12	15	Sand and shale	147	240
Sand	29	44	Shale, streaky	31	271
Shale	18	62	Sand	92	363
Sand	12	74	Shale	3	366
Well A-14					
Owner: Chester Johnson. Driller: Ted Pursley.					
Surface soil	3	3	Sand and shale, sandy	163	239
Caliche	14	17	Shale, streaky	32	271
Sand	17	34	Sand	92	363
Shale, streaky	42	76	Shale	2	365
Well A-16					
Owner: M. A. Giese. Driller: Pursley & Son.					
Surface soil	3	3	Sand with shale breaks	121	199
Caliche, shaly	13	16	Shale	48	247
Sand	31	47	Sand	113	360
Shale	31	78	Shale, streaky	2	362

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well A-31					
Owner: Unknown. Driller: Layne-Texas Co.					
Top soil	3	3	Sand	47	111
Clay	9	12	Sand and clay streaks	8	119
Sand	25	37	Sand	15	134
Clay	10	47	Clay	34	168
Sand	8	55	Sand	70	238
Clay	9	64	Gravel	3	241
Well A-40					
Owner: Jack Fett. Driller: Pursley & Son.					
Shale	12	12	Sand	35	398
Quicksand	181	193	Shale	22	420
Shale	13	206	Sand	50	470
Sand	60	266	Shale	37	507
Shale	56	322	Sand	45	552
Sand	10	332	Shale	6	558
Shale	31	363			
Well B-12, partial log					
Owner: Armendaiz Estate. Driller: Magnolia Petroleum Co.					
Surface clay and sand	45	45	Sand, hard	68	1,425
Sand and boulders	116	161	Shale and sand streaks	119	1,544
Sand	70	231	Sand, hard	91	1,635
Sand and caliche	106	337	Shale and sand streaks	137	1,772
Sand and shale streaks	514	851	Sand, hard, and sandstone	70	1,842
Shale, sandy and streaks of sandstone	103	954	Sandstone, hard	75	1,917
Sandstone, and sandy shale streaks	64	1,018	Sand, hard, and shale streaks	83	2,000
Rock, sandy, hard	74	1,092	Sand and sandy shale	217	2,217
Shale and hard sand streaks	128	1,220	Sand, hard	273	2,490
Sand, hard, and shale streaks	137	1,357	Total depth		9,620
Well C-1					
Owner: Phillip Wardner Estate. Driller: The Texas Co.					
Surface clay and sand	200	200	Shale, sandy and shells	325	1,689
Gravel, sandy and shale	625	825	Shale, sand streaks	183	1,872
Shale and sand	539	1,364	Shale and sand	288	2,160

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well E-7					
Owner: Will McCorkele. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	39	125
Clay	4	10	Clay and sand streaks	25	150
Sand	30	40	Sand	67	217
Clay	46	86	Gravel	26	243
Well E-20					
Owner: Adams Gardens Food Products Co. Driller: J. B. Taylor.					
Surface	20	20	Sand	8	313
Clay	35	55	Clay	3	316
Gravel	20	75	Sand	45	361
Clay and caliche	39	114	Shale	12	373
Sand	16	130	Shale, sandy	2	375
Clay	4	134	Sand and gravel	43	418
Sand	9	143	Shale	3	421
Clay, sandy	5	148	Sand	4	425
Sand	8	156	Shale	2	427
Sand and gravel	27	183	Sand	43	470
Clay, tough	12	195	Shale	5	475
Sand	6	201	Sand	12	487
Clay, sandy	15	216	Sand, hard, and gravel	18	505
Sand	7	223	Shale	6	511
Clay, tough	37	260	Shale, sandy	10	521
Sand	6	266	Shale, sticky	17	538
Shale	19	285	Sand, hard	25	563
Sand	18	303	Shale, sticky	2	565
Shale, tough	2	305			
Well E-25					
Owner: City of La Feria. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	63	218
Sand	34	40	Sand and gravel	22	240
Clay	38	78	Clay	2	242
Sand and clay	77	155			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well E-26					
Owner: Rabb Tract. Driller: Layne-Texas Co.					
Topsoil	4	4	Packsand	16	66
Sand, muddy	12	16	Clay	11	77
Clay	2	18	Packsand	153	230
Sand	26	44	Gravel	2	232
Clay	6	50			
Well E-28					
Owner: Paul Davies. Driller: Waldrep & Hamilton.					
Sand	26	26	Sand, coarse	8	73
Clay	2	28	Clay	145	218
Sand, yellow	4	32	Gravel	28	246
Clay	33	65			
Well E-32					
Owner: B. H. Dunlap. Driller: A & T Drilling Co.					
Clay	30	30	Sand	20	115
Sand	15	45	Clay	30	145
Clay	15	60	Sand	41	186
Sand	26	86	Clay	26	212
Clay	9	95	Sand and gravel	17	229
Well E-34					
Owner: Martin Palmer. Driller: A & T Drilling Co.					
Surface soil	6	6	Gravel	5	160
Sand	48	54	Clay	16	176
Clay and streaks of sand	56	110	Sand	20	196
Sand	45	155	Gravel	18	214
Well E-38					
Owner: Bob Hall. Driller: A & T Drilling Co.					
Surface soil	12	12	Sand	28	153
Clay	13	25	Clay	32	185
Sand	40	65	Sand	23	208
Clay and sand streaks	60	125	Gravel	17	225

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well E-39					
Owner: Bob Hall. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	34	142
Sand	42	48	Gravel	13	155
Clay and sand streaks	60	108			
Well E-40					
Owner: Sid Berly. Driller: A & T Drilling Co.					
Surface soil	27	27	Sand	3	218
Sand	25	52	Sand and gravel	10	228
Clay	163	215			
Well E-43					
Owner: H. C. Lewis. Driller: A & T Drilling Co.					
Surface soil	15	15	Clay	16	113
Sand	57	72	Sand	35	148
Clay	17	89	Gravel, coarse	17	165
Sand	8	97	Clay	3	168
Well E-45					
Owner: Ed Wolfe. Driller: A & T Drilling Co.					
Surface soil	10	10	Clay	21	118
Sand	38	48	Sand	25	143
Clay	28	76	Gravel	26	169
Sand	21	97			
Well E-46					
Owner: Felix Till. Driller: A & T Drilling Co.					
Surface soil	7	7	Sand	45	105
Sand	28	35	Clay	17	122
Clay	25	60	Gravel, coarse	33	155

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well E-47					
Owner: Richard Rowland. Driller: A & T Drilling Co.					
Surface soil	10	10	Sand	41	151
Sand	32	42	Gravel	24	175
Clay, broken streaks	68	110			
Well E-49					
Owner: H. C. Lewis. Driller: A & T Drilling Co.					
Surface soil	15	15	Sand	25	138
Sand	38	53	Sand and gravel	19	157
Clay	10	63	Clay and sand streaks	26	183
Sand	15	78	Sand	15	198
Clay	7	85	Gravel and sand	42	240
Sand	18	103	Clay	2	242
Clay	10	113			
Well E-50					
Owner: L. L. Lawson. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	10	135
Clay	39	45	Clay	5	140
Sand	30	75	Sand	5	145
Clay	5	80	Gravel, coarse	33	178
Sand	10	90	Sand	22	200
Clay	35	125	Gravel	22	222
Well E-51					
Owner: City of Harlingen. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand and clay streaks	40	110
Clay and sand streaks	30	36	Clay	14	124
Clay	28	64	Sand	22	146
Sand	6	70	Gravel	24	170

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well E-52					
Owner: C. L. Kaiegler. Driller: A & T Drilling Co.					
Surface soil	12	12	Sand	15	115
Sand	16	28	Clay	5	120
Clay	32	60	Sand	20	140
Sand	15	75	Clay	5	145
Clay	25	100	Gravel	20	165
Well E-54					
Owner: Dave Morgan. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	40	100
Clay	24	30	Clay	30	130
Sand	10	40	Sand	10	140
Clay	20	60	Gravel	32	172
Well E-56					
Owner: Bob Hall. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	18	108
Clay	22	28	Clay	12	120
Sand	32	60	Sand	24	144
Clay	30	90	Gravel	16	160
Well E-58					
Owner: H. C. Lewis. Driller: A & T Drilling Co.					
Surface soil	15	15	Sand	63	148
Sand	54	69	Sand and gravel	13	161
Sand and clay streaks	16	85	Clay	3	164
Well E-65					
Owner: Cardell Gunn. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	21	155
Clay	24	30	Gravel	10	165
Sand	28	58	Clay	2	167
Clay and sand streaks	76	134			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well F-22					
Owner: G. B. Smith. Driller: A & T Drilling Co.					
Surface soil	6	6	Clay	42	170
Sand	24	30	Sand	10	180
Clay	10	40	Clay	35	215
Sand	54	94	Sand	15	230
Sand with clay streaks	34	128	Gravel	23	253
Well F-30					
Owner: W. J. Woolem. Driller: Virdell Drilling Co.					
Clay, yellow	88	88	Clay	15	290
Sand, fine, brown	26	114	Sand and gravel	19	309
Clay, caliche, white	44	158	Clay	41	350
Sand and gravel	56	214	Sand	35	385
Clay and sand	46	260	Clay	14	399
Sand with small gravel	15	275			
Well F-38					
Owner: M. H. Scaief. Driller: Tom Wilkinson.					
Surface soil	10	10	Sand	40	89
Clay, with sand streaks	20	30	Clay, sandy	48	137
Clay	19	49	Gravel	61	198
Well F-44					
Owner: D. H. Palmer. Driller: Virdell Drilling Co.					
Sand with streaks of clay	26	26	Sand, black, fine	15	95
Sand	8	34	Clay, blue	10	105
Clay, yellow	8	42	Sand	5	110
Sand, black, fine	16	58	Clay, blue	5	115
Clay with streaks of sand	22	80	Gravel	51	166
Well F-45					
Owner: V. E. Morrow. Driller: A & T Drilling Co.					
Clay	35	35	Sand	21	175
Sand	35	70	Clay	30	205
Clay	50	120	Sand	41	246
Sand	15	135	Sand and gravel	16	262
Clay	19	154			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well F-50					
Owner: B. F. Morrow. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	20	120
Sand	19	25	Clay	4	124
Clay	35	60	Sand and gravel	39	163
Sand with clay streaks	40	100			
Well F-54					
Owner: T. Oyama. Driller: Tom Wilkinson.					
Surface soil	6	6	Sand	112	171
Clay	32	38	Gravel	22	193
Sand	8	46	Clay	7	200
Clay, sandy	13	59			
Well F-55					
Owner: Ray McDonald. Driller: Tom Wilkinson.					
Surface clay	18	18	Clay	19	138
Sand	38	56	Sand	10	148
Clay	33	89	Gravel	57	205
Sand	30	119	Clay	7	212
Well F-57					
Owner: G. W. McCain. Driller: Tom Wilkinson.					
Surface soil	15	15	Sand	10	120
Sand	40	55	Gravel	60	180
Clay	55	110			
Well F-61					
Owner: G. W. McCain. Driller: Tom Wilkinson.					
Surface soil	15	15	Gravel	15	151
Sand	14	29	Clay	87	238
Clay	10	39	Clay, sandy	6	244
Sand	13	52	Sand, with shale streaks	30	274
Clay	28	80	Clay	16	290
Sand	11	91	Sand	15	305
Clay	7	98	Clay	15	320
Sand	25	123	Gravel, fine with sand	65	385
Clay	13	136	Clay, hard	1	386

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well F-68					
Owner: T. Kawamara Driller: Tom Wilkinson.					
Surface soil	10	10	Clay	3	153
Sand	19	29	Sand	28	181
Clay	17	46	Clay	15	196
Sand	59	105	Sand	15	211
Clay	16	121	Clay	7	218
Sand	13	134	Sand with some gravel	69	287
Gravel, sandy, and clay	16	150	Gravel	59	346
Well F-71					
Owner: L. M. Mikkleson. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	42	164
Sand, with clay streaks	116	122	Gravel	16	180
Well F-72					
Owner: Brown & Slaughter. Driller: Tom Wilkinson.					
Clay, sandy	29	29	Sand	8	120
Sand	39	68	Sand and gravel	22	142
Sand and clay	21	89	Gravel	38	180
Clay	23	112	Clay	4	184
Well F-74					
Owner: S. Oyama. Driller: Tom Wilkinson.					
Surface soil	10	10	Sand	30	120
Sand	39	49	Clay, sandy	31	151
Clay	11	60	Gravel	53	204
Sand	21	81	Clay	2	206
Clay	9	90			
Well F-75					
Owner: T. Date. Driller: Tom Wilkinson.					
Surface clay	8	8	Sand	22	137
Sand	56	64	Clay	3	140
Clay	51	115	Gravel	60	200

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well F-76					
Owner: Kenneth Shimotsu. Driller: Tom Wilkinson.					
Surface soil	15	15	Clay	103	151
Sand	33	48	Gravel	57	208
Well F-78					
Owner: Louis Stanley. Driller: Henry Cleveland.					
Clay	24	24	Shale, clay	70	160
Sand, broken	16	40	Gravel	12	172
Shale	45	85	Shale	2	174
Sand	5	90			
Well F-80					
Owner: George Oyama. Driller: Tom Wilkinson.					
Surface soil	15	15	Sand and clay	31	151
Sand	21	36	Clay	15	166
Clay	53	89	Gravel	31	197
Sand with clay streaks	31	120	Clay	4	201
Well F-81					
Owner: Herman Johnson. Driller: Tom Wilkinson.					
Surface soil	17	17	Clay	16	121
Sand	33	50	Sand	29	150
Clay	10	60	Gravel	42	192
Sand	45	105	Clay	2	194
Well F-83					
Owner: Oscar Thiems. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	30	135
Clay	24	30	Clay	20	155
Sand and clay	65	95	Gravel	13	168
Clay	10	105			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well F-85					
Owner: Charles Barber. Driller: Tom Wilkinson.					
Surface soil	5	5	Sandrock and clay	50	150
Caliche	4	9	Clay	50	200
Clay	20	29	Sandrock and clay	50	250
Sand	18	47	Clay	50	300
Clay	53	100	Sandrock	32	332
Well J-4					
Owner: H. C. Lewis. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	17	144
Sand	14	20	Sand and gravel	21	165
Clay and sand	70	90	Clay	2	167
Clay	37	127			
Well J-8					
Owner: Leo Smith. Driller: A & T Drilling Co.					
Surface soil	6	6	Clay	52	146
Clay with sand streaks	88	94	Gravel	26	172
Well J-9					
Owner: E. C. Weber. Driller: Gene Liberty.					
Surface soil	9	9	Sand	17	148
Clay	80	89	Gravel	12	160
Clay, sandy	42	131			
Well J-14					
Owner: Mrs. M. A. Reed. Driller: Otto Walk.					
Surface soil	10	10	Sand	12	72
Sand	2	12	Clay	60	142
Clay	48	60	Gravel and sand	3	145
Well J-15					
Owner: Vick Peters. Driller: Otto Walk.					
Surface soil	10	10	Clay	10	82
Sand	2	12	Sand	50	132
Clay	48	60	Rock, shell, sand and gravel	3	135
Sand	12	72			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well J-18					
Owner: John Benson. Driller: Tom Wilkinson.					
Surface soil	12	12	Clay and sand	31	122
Clay	17	29	Clay	30	152
Sand	31	60	Gravel	35	187
Clay	31	91			
Well J-19					
Owner: Jesus Garza. Driller: Tom Wilkinson.					
Surface soil	10	10	Sand and clay	31	60
Clay	2	12	Clay	92	152
Sand	17	29	Gravel	33	185
Well J-22					
Owner: J. E. Gerusa. Driller: A & T Drilling Co.					
Surface soil	10	10	Gravel	4	126
Clay	36	46	Clay	4	130
Sand	8	54	Sand	15	145
Clay with sand streaks	49	103	Sand and gravel	16	161
Sand	19	122			
Well J-23					
Owner: Juan B. Garcia. Driller: Tom Wilkinson.					
Clay and sand	29	29	Clay	50	140
Sand	31	60	Gravel	60	200
Sand and clay	30	90			
Well J-25					
Owner: Santiago Gomez. Driller: Tom Wilkinson.					
Surface soil	7	7	Sand and clay	61	121
Clay and sand	22	29	Sand	30	151
Sand	31	60	Gravel	50	201
Well K-5					
Owner: F. H. Wilson. Driller: A & T Drilling Co.					
Surface soil	6	6	Gravel	14	185
Sand	165	171			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well K-8					
Owner: J. G. Ballinger. Driller: A & T Drilling Co.					
Surface soil	6	6	Sand	63	158
Sand	12	18	Gravel	32	190
Clay	77	95	Sand	14	204
Well K-10					
Owner: G. B. Smith. Driller: A & T Drilling Co.					
Surface soil	7	7	Sand	35	95
Clay	3	10	Clay	30	125
Sand	16	26	Sand and gravel	49	174
Clay	34	60			
Well K-11					
Owner: O. W. Tucker. Driller: Tom Wilkinson.					
Surface soil and clay	29	29	Clay, sandy	19	140
Clay	61	90	Gravel	58	198
Clay and sand	10	100	Clay	2	200
Clay	21	121			
Well K-13					
Owner: Mrs. -- Coakley. Driller: Tom Wilkinson.					
Surface soil	10	10	Clay	30	147
Clay	65	75	Sand	3	150
Sand	42	117	Gravel	49	199
Well K-14					
Owner: M. de los Santos. Driller: Tom Wilkinson.					
Clay	29	29	Sand	23	145
Sand	32	61	Gravel	38	183
Clay	31	92	Clay	1	184
Clay, sandy	30	122			
Well K-18					
Owner: Mrs. A. D. Dickinson. Driller: A & T Drilling Co.					
Surface soil	8	8	Sand	8	132
Sand	18	26	Clay	8	140
Clay	10	36	Sand	10	150
Sand	50	86	Gravel	23	173
Clay	38	124			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well K-32					
Owner: L. T. Boswell. Driller: Fred Fielder.					
Surface soil	12	12	Sand and gravel	31	239
Clay	42	54	Clay	3	242
Sand	109	163	Sand and gravel	24	266
Sand and gravel	33	196	Clay	13	279
Clay	12	208			
Well K-33					
Owner: Ben Benson. Driller: A & T Drilling Co.					
Surface soil	12	12	Sand and gravel	19	185
Sand	58	70	Clay	26	211
Clay	56	126	Sand and gravel	21	232
Sand	8	134	Clay	2	234
Clay	20	154	Sand and gravel	48	282
Sand	12	166	Sand	18	300
Well K-34					
Owner: J. T. Canales. Driller: Fred Fielder.					
Surface soil	16	16	Gravel	15	180
Sand	24	40	Clay	13	193
Sand and clay	125	165	Gravel	109	302
Well K-41					
Owner: Carlos Watson Driller: A & T Drilling Co.					
Surface soil	16	16	Sand	22	230
Sand	38	54	Sand and gravel	10	240
Clay with sand streaks	114	168	Clay	5	245
Sand	10	178	Sand and gravel	29	274
Sand and gravel	18	196	Clay	2	276
Clay	12	208			
Well K-45					
Owner: Raul Lopez. Driller: A & T Drilling Co.					
Surface soil	8	8	Clay	7	240
Clay, sandy	162	170	Sand and gravel	28	268
Sand and gravel	63	233			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well K-46					
Owner: Charles Russell. Driller: Virdell Drilling Co.					
Surface sand and clay	26	26	Clay	5	145
Sand with small gravel	22	48	Sand, fine, with streaks of clay	30	175
Clay	22	70	Gravel, small	20	195
Sand with clay streaks	10	80	Gravel, large	40	235
Gravel, fine, with sandy clay streaks	15	95	Clay	2	237
Sand, fine, with streaks of clay	45	140			
Well K-47					
Owner: J. T. Canales. Driller: Fred Fielder.					
Surface soil and sand	25	26	Gravel	28	230
Clay and sand	171	196	Clay	44	274
Sand	6	202	Sand	54	328
Well L-11					
Owner: A. H. Fernandez. Driller: Tom Wilkinson.					
Clay	15	15	Clay, imbedded gravel	9	185
Sand	20	35	Clay	28	213
Clay	101	136	Sand, clay breaks	31	244
Sand	28	164	Gravel	55	299
Gravel, sandy	12	176	Clay	3	302
Well L-13					
Owner: Balbino Rego. Driller: Tom Wilkinson.					
Surface soil	29	29	Sand	5	150
Clay	6	35	Gravel	61	211
Sand	54	89	Clay	30	241
Clay	31	120	Clay with sand streaks	24	265
Clay, sandy	25	145	Gravel	46	311

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well L-20					
Owner: A. H. Fernandez. Driller: A & T Drilling Co.					
Surface soil	7	7	Sand, clay streaks	29	93
Clay, sandy	10	17	Clay	95	188
Sand	22	39	Gravel, sand streaks	40	228
Clay	25	64	Sand	2	230
Well L-21					
Owner: A. H. Fernandez. Driller: A & T Drilling Co.					
Surface soil	6	6	Clay, sand streaks	74	167
Sand	48	52	Sand and gravel	47	214
Clay	25	77	Sand, clay streaks	39	253
Sand	16	93	Clay	52	305
Well L-22					
Owner: Mrs. Alice Mayer. Driller: Tom Wilkinson.					
Surface soil	4	4	Sand	50	155
Clay	64	68	Clay	10	165
Sand	22	90	Sand and clay	31	196
Clay	15	105	Gravel	49	245
Well L-23					
Owner: George H. Bingley. Driller: A & T Drilling Co.					
Surface soil	6	6	Clay	33	135
Clay	24	30	Sand	10	145
Sand	25	55	Clay	14	159
Clay	20	75	Sand	18	177
Sand	27	102	Gravel	13	190
Well L-25					
Owner: H. B. Fleming. Driller: O. N. Gilliland.					
Soil, clay	149	149	Sand, hard and soft streaks, gravel	34	204
Sandstone	2	151			
Clay, white	19	170			

Table 4.- Drillers' logs of wells in Cameron County--Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Well L-27					
Owner: -- Fleming. Driller: Ted Pursley.					
Surface soil	3	3	Shale, sticky	20	160
Caliche, shaly	11	14	Sand	11	171
Shale, sticky	33	47	Sand, hard	16	187
Sand	34	81	Gravel	11	198
Shale, sticky	36	117	Sand and gravel	13	211
Sand	23	140			
Well L-32					
Owner: City of Brownsville. Driller: Texas Water Supply Co.					
Surface soil	15	15	Clay sand streaks	127	342
Sand, fine with streaks of wood	24	39	Sand, clay streaks	36	378
Clay, gumbo	13	52	Clay	24	402
Sand, with streaks of clay	46	98	Sand and gravel, fine	65	467
Clay	54	152	Shale	21	488
Sand, fine	44	196	Sand	15	503
Clay and sand	19	215			
Well N-3					
Owner: Holmes Drilling Co. Driller: Ted Pursley.					
Shale, rotten	68	68	Sand, water, salty	122	331
Sand, water, salty	80	148	Shale	33	364
Shale, sandy	21	169	Sand, water, salty	48	412
Shale	40	209			

Table 5.- Analyses of water from wells in Cameron County, Texas

(Analyses in parts per million except specific conductance, pH, and percent sodium)

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium ($Na+K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
A-1	W. A. Stohl	367	Jan. 30, 1952	31	-	74	59	1,220	519	937	1,170	2.2	1.0	7.7	3,760	427	86	5,810	7.5
A-3	do.	361	Feb. 15, 1952	31	-	69	59	1,220	535	933	1,170	-	.5	7.2	3,750	414	86	6,010	7.6
A-4	Frank Solis	25	Jan. 7, 1952	54	-	178	78	87	332	156	175	.4	321	.25	1,210	764	20	1,800	8.2
A-6	Cruce Williams	329	July 21, 1952	44	-	104	109	1,140	a/469	1,060	1,200	.6	15	5.8	3,910	708	78	6,090	8.5
A-7	do.	27	do.	100	-	106	95	571	649	422	608	.8	81	-	2,300	655	65	3,580	7.3
A-10	A. B. White Estate	40	Sept. 7, 1945	-	-	-	-	-	687	1,300	1,840	-	9.6	-	-	1,050	-	-	-
A-12	M. W. Nelson	366	Dec. 4, 1951	24	-	73	62	1,320	549	1,060	1,240	-	.0	7.8	4,060	437	87	6,310	7.5
A-14	Chester Johnson	365	Dec. 14, 1951	31	-	44	37	1,050	569	700	920	2.8	.5	7.2	3,070	262	90	4,820	7.7
A-15	do.	365	do.	29	-	62	62	1,160	518	932	1,100	2.4	.0	7.6	3,610	410	86	5,580	8.1
A-16	M. A. Giese	362	Dec. 10, 1951	31	-	36	34	948	513	645	860	2.8	.0	6.1	2,810	230	90	4,470	8.0
A-19	Fred Miller	390	Jan. 14, 1952	32	-	43	42	1,080	574	757	940	2.8	.2	2.4	3,180	280	89	5,050	7.6
A-22	J. G. Ballinger	21	Jan. 7, 1952	96	-	194	164	571	390	708	920	2.0	30	.79	2,880	1,160	52	4,370	7.9
A-23	R. B. Ballinger	20	do.	95	-	20	21	929	674	490	750	7.0	13	2.4	2,660	136	94	4,150	8.2
A-25	J. G. Ballinger	30	Sept. 7, 1945	-	-	-	-	-	597	520	575	-	22	-	-	285	-	-	-
A-29	E. E. Petri	254	do.	-	-	-	-	-	542	300	830	-	-	-	-	608	-	-	-
A-30	Bob Harper	110	do.	-	-	-	-	-	496	500	505	-	.4	-	-	308	-	-	-
A-32	H. E. Rushing	96	Sept. 6, 1945	-	-	-	-	-	498	1,100	1,010	-	.2	-	-	600	-	-	-
A-34	F. H. Vahlsing	697	Jan. 16, 1952	32	-	135	81	1,230	309	975	1,450	.8	.5	5.4	4,060	670	80	6,380	7.4
A-35	do.	692	do.	29	-	83	72	1,240	321	1,000	1,300	1.0	.0	5.8	3,890	503	84	6,190	8.0
A-36	do.	35	Sept. 7, 1945	-	-	-	-	-	429	55	143	-	.8	-	-	555	-	-	-
A-38	Thomas North	363	Jan. 31, 1952	35	-	152	169	1,510	466	1,640	1,660	1.0	.5	7.6	5,400	1,070	75	7,920	7.2
A-41	Otho A. Wyrick	14	Jan. 14, 1952	47	-	104	59	389	403	432	418	.9	5.0	1.2	1,650	502	63	2,630	7.9
B-3	F. Armendiaz Estate	30	Sept. 23, 1952	52	-	83	40	272	472	251	210	.0	5.0	1.3	1,140	372	61	1,840	7.5
B-7	C. Hext	20	Sept. 7, 1945	-	-	-	-	-	348	260	522	-	.0	-	-	818	-	-	-
B-9	H. E. Butt	-	Nov. 17, 1952	40	-	350	156	731	400	757	1,420	-	5.6	1.2	3,660	1,520	51	5,700	7.7
B-11	Lucio Perez	27	Sept. 21, 1952	98	-	72	71	341	541	266	338	1.8	14	-	1,470	472	61	2,330	7.5
B-13	Roy Johnson	35	Sept. 6, 1945	-	-	-	-	-	310	340	279	-	.5	-	-	382	-	-	-
C-2	Horace Grisham	16	July 30, 1945	-	-	82	25	74	426	19	71	-	.2	-	481	308	-	-	-
E-1	H. S. Norman	206	Sept. 8, 1945	-	-	102	70	808	397	892	740	-	.8	-	2,810	542	-	-	-
E-2	Wilson School	55	July 16, 1945	-	-	144	90	228	285	382	420	-	1.2	-	1,410	730	-	-	-
E-4	Beryl Berry	451	June 23, 1952	43	-	34	23	465	b/538	379	242	2.0	2.5	1.8	1,460	180	85	2,320	8.3
E-7	Will McCorkele	243	Oct. 28, 1952	36	-	28	15	304	474	213	122	-	.0	.82	968	132	83	1,490	7.8
E-9	A. L. Allen	26	Sept. 8, 1945	-	-	-	-	-	231	220	219	-	.0	-	-	315	-	-	-
E-11	E. N. Keeton	34	July 19, 1945	-	-	-	-	-	130	220	291	-	1.8	-	-	638	-	-	-
E-16	Willis Seward	240	Aug. 3, 1952	34	-	31	18	348	c/488	260	160	2.0	.0	1.8	1,090	152	83	1,780	8.3
E-17	C. O. Moore	238	Aug. 7, 1952	34	-	115	59	498	300	322	718	.6	2.5	1.2	1,900	530	67	3,230	7.5

Table 5.- Analyses of water from wells in Cameron County--Continued

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium ($Na+K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
E-18	N. M. Groves	35	Aug. 9, 1952	44	-	116	40	200	292	267	250	2.0	2.0	0.44	1,070	454	49	1,720	7.4
E-19	J. C. Dunn	216	July 16, 1945	-	-	75	36	422	371	429	356	-	1.0	-	1,500	335	-	-	-
E-20	Adams Gardens Food Products Co.	565	Aug. 9, 1945	-	-	95	53	862	307	905	805	-	.0	-	2,870	455	-	-	-
E-21	D. G. Dill	23	Sept. 8, 1945	-	-	-	-	-	694	900	1,050	-	.4	-	-	870	-	-	-
E-22	Henry Sepp	40	July 16, 1945	-	-	54	12	391	375	337	264	-	3.8	-	1,250	184	-	-	-
E-23	City of La Feria	267	June 19, 1952	33	-	90	46	447	474	451	372	1.2	3.0	1.8	1,680	414	70	2,680	7.7
E-25	do.	242	do.	34	-	100	49	502	426	520	462	1.4	1.8	1.8	1,880	451	71	2,990	7.6
E-28	Paul Davies	246	Sept. 4, 1945	-	-	180	88	417	390	686	485	-	.2	-	2,050	811	-	-	-
E-29	H. G. McCrum	218	July 15, 1945	-	-	61	57	495	410	569	378	-	1.8	-	1,760	386	-	-	-
E-30	Sid Berly	214	July 17, 1952	34	-	102	74	475	143	764	475	-	1.0	1.4	2,000	559	65	3,260	7.9
E-31	do.	184	July 2, 1952	34	-	72	37	375	431	438	240	1.2	.5	1.2	1,410	332	71	2,230	7.8
E-32	B. H. Dunlap	229	Oct. 30, 1952	36	-	108	60	472	365	662	400	-	.0	1.2	1,920	516	67	2,890	7.8
E-34	Martin Palmer	214	Oct. 9, 1952	42	-	42	27	189	290	233	108	-	2.2	.47	787	216	66	1,330	8.2
E-35	T. S. Wallace	201	Aug. 3, 1945	-	-	81	32	242	420	308	138	-	1.5	-	1,010	334	-	-	-
E-36	John Weckl	350	Feb. 20, 1952	32	-	55	28	492	524	505	260	-	.5	2.2	1,630	252	81	2,560	7.5
E-37	Carl Zeitler	217	June 20, 1945	-	-	22	21	535	264	815	170	-	.5	-	1,690	142	-	-	-
E-38	Bob Hall	225	Aug. 8, 1952	35	-	74	34	345	405	435	200	1.2	.5	.95	1,320	324	70	2,070	7.9
E-39	do.	155	Oct. 15, 1952	44	-	106	40	273	424	300	250	-	3.5	.24	1,220	429	58	1,960	7.9
E-40	Sid Berly	228	July 2, 1952	34	-	59	29	333	448	334	201	1.2	.0	1.2	1,210	266	73	1,940	7.7
E-42	do.	255	do.	36	-	108	46	362	383	506	282	1.0	1.0	.90	1,530	458	63	2,440	7.7
E-43	H. C. Lewis	168	Jan. 15, 1952	47	-	76	32	226	454	179	168	.7	2.2	.20	954	321	60	1,530	7.6
E-46	Felix Till	155	Sept. 7, 1952	44	-	51	21	119	254	144	79	1.0	.5	.27	585	214	55	1,000	8.0
E-47	Richard Rowland	175	do.	43	-	53	30	194	324	249	112	1.0	.5	.46	842	256	62	1,430	8.0
E-48	Steve Hobeck	165	Jan. 31, 1952	36	-	50	22	260	449	197	145	.8	.8	1.0	934	216	72	1,480	7.5
E-50	L. L. Lawson	222	Sept. 4, 1952	47	-	127	36	298	408	361	270	.8	.0	.45	1,340	465	58	2,130	7.6
E-51	City of Harlingen	170	Apr. 29, 1952	47	0.03	88	31	225	430	254	162	.8	.0	.37	1,020	347	58	1,610	7.6
E-53	Mrs. J. A. Morgan	141	July 21, 1945	-	-	125	38	196	415	285	182	-	-	-	1,030	468	-	-	-
E-54	Dave Morgan	172	Sept. 4, 1952	45	-	65	31	207	349	244	132	.8	3.0	.30	900	290	61	1,520	8.0
E-55	Sid Berly	205	July 2, 1952	46	-	157	58	289	315	426	392	.8	4.0	.33	1,530	630	50	2,520	7.8
E-56	Bob Hall	160	Oct. 9, 1952	44	-	174	60	266	218	449	445	-	5.4	.48	1,550	680	46	2,640	7.8
E-57	John Benson	162	Jan. 17, 1952	42	-	67	35	194	231	249	202	.6	3.2	.76	908	311	58	1,680	7.9
E-58	H. C. Lewis	164	Jan. 31, 1952	46	-	112	39	164	452	219	140	.6	.0	.60	943	440	45	1,470	7.9
E-59	A. J. Phillips	164	do.	47	-	108	38	155	431	178	147	.6	3.2	.54	889	426	44	1,440	7.5
E-60	do.	149	July 20, 1945	-	-	-	-	-	361	180	138	-	3.8	-	-	384	-	-	-
E-64	J. C. Dunn	155	July 16, 1945	-	-	-	-	-	196	240	100	-	3.8	-	-	234	-	-	-
E-65	Cardell Gunn	167	June 18, 1952	40	-	110	38	129	418	219	97	1.0	3.0	.45	859	430	39	1,330	7.4
E-66	Paul Merten	162	Oct. 13, 1952	45	-	148	40	135	412	311	120	-	3.0	.35	1,010	534	35	1,500	7.9

Table 5.- Analyses of water from wells in Cameron County--Continued

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium ($Na+K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
F-1	D. B. Meadows	16	Jan. 14, 1952	47	-	132	60	415	462	449	450	0.9	5.0	0.87	1,790	576	61	2,760	7.8
F-2	Mrs. Doris Templeton	32	July 13, 1945	32	0.11	114	37	330	418	356	308	1.0	5.4	-	1,390	436	-	2,170	7.2
F-3	Jose Chavez, Jr.	40	Sept. 8, 1952	50	-	110	45	178	304	280	208	2.0	.5	.57	1,020	460	46	1,640	7.6
F-5	Pedro Chavez	40	do.	42	-	91	31	169	304	206	172	1.2	.0	.36	862	354	51	1,410	7.6
F-8	U. S. Government	1,012	Mar. 1944	15	.03	23	3.8	823	193	1,020	451	2.1	1.2	-	2,430	73	-	-	8.4
F-9	Felix Puga	14	Aug. 5, 1945	-	-	-	-	-	370	400	230	-	.4	-	-	585	-	-	-
F-11	G. A. Lovelace	30	Aug. 12, 1945	-	-	18	13	597	520	583	257	-	.0	-	1,720	98	-	-	-
F-18	H. Horton	223	July 18, 1945	-	-	-	-	-	127	1,500	1,080	-	-	-	-	848	-	-	-
F-19	T. J. Wallace	135	July 21, 1945	-	-	147	79	438	356	661	470	-	1.8	-	1,970	692	-	-	-
F-20	C. E. Morgan	225	July 22, 1945	-	-	304	162	923	465	1,450	1,090	-	2.8	-	4,160	1,420	-	-	-
F-22	G. B. Smith	253	Apr. 30, 1952	34	-	168	87	514	337	706	630	-	.2	1.7	2,310	776	59	3,610	7.4
F-23	Tomas Pena	160	July 21, 1945	-	-	174	96	528	328	695	695	-	3.0	-	2,350	828	-	-	-
F-24	O. W. Axtell	215	do.	-	-	164	76	456	363	657	518	-	2.2	-	2,050	722	-	-	-
F-27	L. R. Mortesen	310	Aug. 16, 1952	34	-	102	52	535	370	598	482	.2	1.0	2.2	1,990	468	71	3,140	7.5
F-34	Alexander Marketing Co.	322	Jan. 22, 1952	33	-	58	46	548	376	552	475	1.0	.2	2.7	1,910	334	78	3,060	8.3
F-35	Ernest Long	171	June 26, 1952	45	-	216	122	1,150	314	1,100	1,520	1.0	5.0	2.9	4,320	1,040	71	6,780	7.8
F-36	W. Mack	180	Oct. 1, 1952	38	-	98	59	889	437	917	810	-	1.0	3.5	3,030	487	80	4,630	7.5
F-38	M. H. Scaief	198	June 23, 1952	31	2.9	80	51	790	436	818	650	1.4	.8	3.2	2,640	409	81	4,110	7.7
F-39	City of San Benito	226	June 13, 1952	35	.00	68	47	524	405	640	358	1.4	.0	2.1	1,870	363	76	2,910	7.7
F-41	Mrs. M. Yost	130	Aug. 2, 1945	-	-	-	-	-	348	450	316	-	3.0	-	-	338	-	-	-
F-43	E. Hartle	136	Aug. 6, 1945	-	-	-	-	-	394	360	239	-	7.9	-	-	411	-	-	-
F-44	D. H. Palmer	166	May 20, 1952	45	-	111	43	338	385	433	295	1.0	4.5	1.3	1,460	454	62	2,280	7.7
F-45	V. E. Morrow	262	Aug. 19, 1952	32	-	70	34	371	359	400	298	1.0	.5	1.1	1,380	314	72	2,280	7.6
F-49	O. L. Waldrep	155	Aug. 10, 1945	-	-	-	-	-	311	280	144	-	4.7	-	-	262	-	-	-
F-50	B. F. Morrow	163	Aug. 20, 1952	45	-	163	56	361	407	454	432	1.0	.5	.70	1,710	637	55	2,750	7.7
F-51	D. C. Hance	144	Aug. 6, 1945	-	-	91	48	298	263	431	287	-	4.8	-	1,290	424	-	-	-
F-52	M. D. Hance	176	Sept. 3, 1952	45	-	97	35	303	401	359	235	1.0	.0	1.0	1,270	386	63	2,010	7.7
F-53	L. M. Mikklesen	185	May 20, 1952	50	-	89	38	294	392	310	268	1.0	5.0	1.1	1,250	378	63	1,970	7.3
F-54	T. Oyama	200	do.	46	-	100	42	296	376	335	292	.8	5.0	1.1	1,300	422	60	2,060	7.3
F-55	Ray McDonald	212	Oct. 6, 1952	43	-	118	46	322	401	389	305	.8	.0	.75	1,420	484	59	2,240	8.0
F-58	G. W. McCain	18	Aug. 2, 1945	-	-	128	47	205	213	345	293	-	15	-	1,140	513	-	-	-
F-59	John Kuhar	150	Aug. 12, 1952	53	-	155	83	529	218	694	698	.0	1.5	1.1	2,320	728	61	3,890	7.9
F-60	Joe M. Spear	162	Sept. 3, 1952	49	-	160	80	511	248	653	665	.0	9.2	1.2	2,250	728	60	3,750	7.8
F-61	G. W. McCain	386	May 5, 1952	34	-	115	75	566	390	838	450	-	.0	-	2,270	586	67	3,400	7.7
F-62	do.	381	May 21, 1952	32	-	44	31	444	388	399	325	1.4	.2	1.6	1,470	238	80	2,390	7.8
F-63	G. W. Gamble	464	Jan. 9, 1952	31	-	112	69	632	362	851	560	.7	.5	1.9	2,440	563	71	3,660	7.7

Table 5.- Analyses of water from wells in Cameron County--Continued

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium ($Na+K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
F-64	E. J. Johnson	57	Aug. 2, 1945	-	-	107	29	231	296	304	233	-	0.5	-	1,050	386	-	-	-
F-65	L. A. Perkins	136	do.	-	-	154	52	367	368	467	430	-	3.6	-	1,650	598	-	-	-
F-67	M. T. Rodriquez	70	do.	-	-	142	51	426	456	508	415	-	2.2	-	1,770	564	-	-	-
F-70	L. M. Mikklesen	190	May 21, 1952	47	-	102	40	284	374	310	285	1.0	4.5	-	1,260	419	60	2,030	7.5
F-71	do.	180	May 20, 1952	46	-	84	33	263	412	292	200	1.2	3.2	1.0	1,130	345	62	1,770	7.3
F-74	S. Oyama	206	Sept. 2, 1952	42	-	75	28	280	395	287	208	1.2	6.9	.79	1,120	302	67	1,790	7.3
F-75	T. Date	200	Oct. 2, 1952	47	-	95	32	252	404	254	215	.8	5.0	.81	1,100	368	60	1,770	8.1
F-77	Kenneth Shimotsu	203	Oct. 21, 1952	50	-	108	64	493	220	581	570	-	.2	.87	1,980	532	67	3,310	7.9
F-78	Louis Stanley	174	May 8, 1952	42	-	172	73	650	368	705	770	-	.5	1.5	2,590	729	66	4,160	7.3
F-80	George Oyama	201	Aug. 18, 1952	41	-	122	51	372	433	408	380	1.0	4.0	1.1	1,590	514	61	2,570	7.8
F-82	T. J. Thomas	25	Aug. 2, 1945	-	-	148	32	201	370	286	238	-	2.5	-	1,090	501	-	-	-
F-83	Oscar Thiems	168	Sept. 3, 1952	43	-	280	115	537	258	387	1,200	.6	6.0	.61	2,700	1,170	50	4,710	7.7
G-2	Heaton & Calloway	382	Aug. 3, 1952	52	-	59	87	1,020	194	986	1,120	.4	5.0	2.9	3,420	504	81	5,770	8.2
G-5	August Pfieffer	30	Aug. 11, 1945	-	-	-	-	-	217	240	254	-	-	-	-	420	-	-	-
J-1	Santa Maria Independent School District	161	June 9, 1945	-	-	156	41	103	402	207	167	-	2.2	-	1,010	558	-	-	-
J-1	do.	161	Apr. 17, 1941	-	-	139	37	136	424	173	127	-	2.4	-	823	499	-	-	-
J-3	H. C. Lewis	159	Jan. 16, 1952	46	-	92	35	159	452	182	100	1.0	3.2	.43	844	374	48	1,300	7.6
J-4	do.	167	Jan. 31, 1952	49	-	106	36	152	460	170	130	.6	3.5	.72	874	412	44	1,390	7.4
J-5	John Benson	174	Jan. 17, 1952	47	-	162	51	241	398	368	295	.6	4.5	.62	1,370	614	46	2,120	7.4
J-7	Cook & Herbey	180	Oct. 9, 1952	51	-	78	32	179	402	223	112	-	1.8	.34	879	326	54	1,360	7.6
J-8	Leo Smith	172	Sept. 3, 1952	48	-	47	22	210	343	207	108	1.0	3.5	.49	816	208	69	1,360	8.2
J-10	H. C. Lewis	165	Feb. 20, 1952	48	-	98	35	149	478	174	96	-	3.2	.44	845	388	45	1,330	7.5
J-11	L. A. Kerr	156	June 9, 1945	-	-	91	27	46	283	86	80	-	2.8	-	516	338	-	-	-
J-12	J. C. Dunn	180	June 16, 1952	45	-	104	29	107	455	105	88	.8	3.5	.25	719	378	38	1,170	7.6
J-13	do.	10	do.	-	-	-	-	-	-	-	1,860	Field determination							
J-14	Mrs. M. A. Reed	145	Aug. 4, 1945	-	-	-	-	-	355	140	79	-	0	-	-	360	-	-	-
J-15	Vick Peters	135	June 15, 1945	-	-	92	33	105	389	121	104	-	3.8	-	673	365	-	-	-
J-16	Dale Mock	172	Oct. 30, 1952	48	-	88	28	113	370	153	82	-	.2	.15	706	334	42	1,080	7.6
J-17	A. E. Matz	151	Aug. 29, 1952	53	-	83	45	217	346	354	144	.8	4.5	.51	1,070	384	55	1,760	7.8
J-18	John Benson	187	Jan. 5, 1953	47	-	112	38	96	480	136	75	-	.0	.09	752	436	32	1,170	7.6
J-20	F. J. Anderson	110	Aug. 3, 1945	-	-	58	36	140	253	211	118	-	2.8	-	773	292	-	-	-
J-21	J. Tanamachi	139	Apr. 17, 1941	-	-	151	48	221	360	335	272	-	2.0	-	1,222	574	-	-	-
J-24	San Benito Water District	160	Aug. 3, 1945	-	-	67	30	168	365	165	129	-	2.5	-	834	290	-	-	-
K-1	Emil Kaufman	151	Aug. 2, 1945	-	-	70	23	151	333	149	117	-	4.9	-	712	269	-	-	-
K-2	Cecil Graham	150	do.	-	-	82	37	288	277	363	265	-	5.0	-	1,180	356	-	-	-
K-3	L. C. Poth	474	May 13, 1952	43	-	118	49	428	455	512	380	-	.0	.88	1,750	496	65	2,780	7.6

Table 5.- Analyses of water from wells in Cameron County--Continued

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium ($Na + K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
K-4	F. H. Wilson	177	June 25, 1952	44	-	126	46	427	455	494	380	0.8	5.0	0.96	1,750	504	65	2,730	7.6
K-5	do.	185	July 1, 1952	45	-	122	43	423	423	485	402	.8	4.5	.66	1,730	482	66	2,830	8.0
K-6	Pilar Cabrera	303	Oct. 22, 1952	44	-	98	52	646	370	788	530	-	.2	1.5	2,340	458	75	3,610	7.9
K-7	Barreda Estate	235	Oct. 2, 1952	41	-	135	72	1,030	342	1,160	975	1.0	.5	2.1	3,580	633	78	5,430	7.8
K-8	Joe Ballinger	204	Jan. 8, 1952	50	-	112	63	626	399	812	500	4.0	4.0	1.0	2,360	538	72	3,600	7.7
K-9	Reynaldo Santiso	207	June 26, 1952	51	0.9	122	64	689	389	915	580	1.0	.0	1.7	2,610	568	72	4,090	7.9
K-10	G. B. Smith	174	May 5, 1952	45	-	76	36	417	438	537	242	-	.0	.90	1,570	338	73	2,400	8.0
K-11	O. W. Tucker	200	Oct. 30, 1952	46	-	68	28	322	437	326	192	-	3.5	.50	1,200	284	71	1,830	7.5
K-12	Bert Crawford	184	Oct. 2, 1952	47	-	104	39	299	460	386	210	-	4.6	.53	1,320	420	61	2,010	8.1
K-16	Ricardo Aquilar	174	Oct. 13, 1952	46	-	102	35	97	412	142	82	-	.2	.08	725	398	35	1,120	7.8
K-18	Mrs. A. D. Dickinson	173	do.	40	-	-	-	-	-	123	82	-	-	-	-	-	-	1,180	-
K-19	Eugene Kaufman	140	July 3, 1945	-	-	110	54	246	469	443	130	-	2.8	-	1,220	496	-	-	-
K-20	W. H. Glidewell	171	do.	-	-	111	44	167	357	248	190	-	3.5	-	939	458	-	-	-
K-22	Landrum School	135	Apr. 18, 1941	-	-	121	34	-	448	80	89	-	.2	-	607	442	62	-	-
K-23	La Paloma School	150	do.	-	-	87	39	364	440	464	228	-	4.8	-	1,400	377	-	-	-
K-24	H. D. Smith	170	July 6, 1945	-	-	-	-	-	422	495	-	-	7.8	-	-	600	-	-	-
K-27	Carlos Zapeda	275	Nov. 17, 1952	38	-	60	27	280	494	296	112	-	.2	.54	1,060	200	70	1,630	7.7
K-28	Encantada School	150	Apr. 17, 1941	-	-	113	22	-	340	127	62	-	2.5	-	553	373	59	-	-
K-29	Valley Christian Encampment	270	Nov. 20, 1952	37	-	141	64	701	505	947	530	-	.2	.94	2,670	615	71	3,940	7.5
K-31	Ben Benson	290	June 25, 1952	36	-	58	28	485	495	482	278	1.0	2.0	1.4	1,610	260	80	2,530	7.9
K-32	L. T. Boswell	279	Feb. 2, 1950	33	.17	79	45	535	517	670	312	-	.2	.78	1,930	382	75	2,920	7.6
K-33	Ben Benson	300	June 23, 1952	33	-	82	43	614	495	729	388	.8	.2	1.8	2,140	382	78	3,270	7.6
K-34	J. T. Canales	302	Feb. 21, 1950	32	.38	66	35	439	487	491	255	-	.0	.19	1,560	308	76	2,380	7.5
K-35	do.	250	Feb. 20, 1950	35	.08	70	36	404	513	423	238	-	.2	.35	1,460	322	73	2,280	7.6
K-36	L. T. Boswell	286	do.	34	.1	168	80	612	466	888	535	-	.0	1.3	2,550	748	64	3,780	7.4
K-37	do.	345	June 23, 1952	36	-	58	45	683	448	805	438	1.0	2.5	2.4	2,290	330	82	3,600	8.1
K-38	Pilar Cabrera	286	June 24, 1952	33	-	38	33	567	485	603	312	1.0	2.0	2.6	1,830	230	84	2,900	8.1
K-40	J. T. Canales	275	Feb. 20, 1950	31	-	44	26	435	550	392	225	-	.2	.86	1,420	217	81	2,200	7.7
K-41	Carlos Watson	276	June 23, 1952	34	-	111	60	790	501	894	650	1.0	.0	2.1	2,790	524	77	4,300	7.5
K-42	do.	220	June 24, 1952	36	-	72	47	502	472	528	355	1.0	3.0	1.3	1,780	373	75	2,790	7.7
K-43	Raul Lopez	275	June 23, 1952	33	-	58	29	560	527	547	342	1.0	1.2	2.2	1,830	264	82	2,910	7.6
K-44	Mrs. J. T. Canales	240	Feb. 21, 1950	37	-	94	32	87	433	101	72	-	.0	.34	657	366	34	1,050	7.5
K-47	J. T. Canales	328	do.	34	-	122	73	628	394	606	700	-	.0	-	2,360	604	69	3,700	8.1
K-48	Jose Vesterio	206	July 6, 1945	-	-	-	-	-	302	170	115	-	-	-	-	234	-	-	-
K-49	Villa Nueva School	192	Apr. 18, 1941	-	-	40	22	214	432	150	103	-	.2	-	742	190	-	-	-
K-50	Jesus Costellano	280	June 23, 1952	36	.05	108	68	838	465	1,030	675	1.0	.2	2.2	2,290	549	77	4,520	7.9

Table 5.- Analyses of water from wells in Cameron County--Continued

Well	Owner	Depth of well (ft.)	Date of collection	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Total hardness as $CaCO_3$	Percent sodium	Specific conductance (Micromhos at 25° C.)	pH
L-2	E. Y. Wingate	164	July 10, 1945	-	-	159	64	617	206	966	582	-	8.3	-	2,500	660	-	-	-
L-3	Continental Pipeline Co.	65	do.	-	-	-	-	-	311	1,200	950	-	-	-	-	780	-	-	-
L-4	L. F. Wilkinson	170	1950	-	-	-	230	387	515	1,344	1,241	-	-	-	4,480	1,916	-	-	-
L-5	Hall Palmer	268	Oct. 2, 1952	47	-	156	78	1,400	559	1,210	1,420	1.0	.5	2.4	4,590	710	81	7,030	7.5
L-7	John Prentiss	173	July 11, 1952	47	-	164	68	836	530	1,080	672	.0	10	2.2	3,140	688	73	4,720	7.5
L-9	L. F. Wilkinson	300	July 22, 1952	36	-	105	50	832	536	938	610	.0	2.0	-	2,840	468	79	4,330	7.9
L-11	A. H. Fernandez	302	Oct. 5, 1952	42	-	148	63	883	489	1,100	700	.8	.2	2.3	3,180	628	75	4,750	7.6
L-13	Balbino Rego	311	June 26, 1952	39	-	80	56	758	335	961	575	.8	4.5	2.0	2,640	430	79	4,150	8.0
L-14	R. Grand-Lienard	313	July 2, 1952	20	-	82	49	648	449	798	438	.8	2.5	1.6	2,260	406	78	3,500	8.1
L-15	R. O. Thuem	296	June 27, 1952	37	-	42	32	563	481	573	328	.8	2.0	1.6	1,820	236	84	2,930	8.2
L-19	E. E. Wilson	14	July 11, 1945	-	-	-	-	-	392	1,900	542	-	5.0	-	-	1,100	-	-	-
L-20	A. H. Fernandez	230	Sept. 10, 1952	34	-	48	30	562	496	507	360	1.4	2.0	1.6	1,790	244	83	2,820	7.9
L-23	George Bingley	190	Aug. 29, 1952	36	-	24	16	494	d/553	372	265	2.2	1.0	1.7	1,480	126	90	2,420	8.5
L-24	M. G. Ortiz	165	Aug. 14, 1945	-	-	54	39	904	442	711	820	-	2.2	-	2,750	296	-	-	-
L-25	H. B. Fleming	204	Sept. 3, 1945	-	-	57	22	668	570	588	430	-	.5	-	2,050	233	-	-	-
L-26	B. Castro	212	Aug. 11, 1945	-	-	-	-	-	618	420	540	-	1.2	-	-	285	-	-	-
L-29	City of Brownsville	200	Oct. 22, 1952	34	.00	35	25	652	595	523	415	1.8	.8	1.9	1,980	190	88	3,090	7.7
L-30	do.	203	Oct. 29, 1952	34	.03	35	24	655	591	513	420	1.4	.2	2.7	1,980	186	88	3,040	7.6
L-31	Abraham Longoria	40	July 11, 1945	-	-	-	-	-	117	950	865	-	8.4	-	-	1,220	-	-	-
N-2	R. E. McCaslin	5	Jan. 7, 1953	22	-	96	72	283	340	69	572	.8	.8	-	1,280	536	53	2,400	7.9

a/ Includes equivalent of 22 parts per million carbonate (CO_3).
b/ Includes equivalent of 9 parts per million carbonate (CO_3).
c/ Includes equivalent of 8 parts per million carbonate (CO_3).
d/ Includes equivalent of 16 parts per million carbonate (CO_3).

WILLACY COUNTY

HIDALGO COUNTY

Santa Rosa

Combes

Rio Hondo

Harlingen

La Feria

Adams Gardens Reservoir

San Benito

Santa Maria

Los Fresnos

Port Isabel

BROWNSVILLE

Arroyo Colorado

North Floodway

Resaca del Rancho Viejo Floodway

Laguna Madre

Gulf of Mexico

RIO GRANDE

MEXICO

EXPLANATION

◉ Well used for irrigation, industrial or municipal supplies

○ Well used for domestic or stock supplies

◉ or ◇ unused well

✧ Oil test

$\overline{59}$ Line above well number indicates chemical analysis shown in table 5

Base compiled from general highway map of the Texas State Highway Department; topographic maps of the U. S. Geological Survey and the U. S. Army; and field notes. 1952.

N

0 1 2 3 4 5 Miles

MAP OF CAMERON COUNTY, TEXAS SHOWING LOCATION OF WELLS