

Production Depth Record Shattered

In 1948 for the first time oil and gas were found deeper than 14,000 ft in commercial quantities, in not one but FIVE fields.

By ERNESTINE ADAMS*

DEFINITE proof that know-how in deep drilling is paying off is shown in the fifth annual survey of deep wells. Advanced methods and improved machinery have brought down costs of these wells (below 12,000 ft) despite increased costs of labor and materials. Not only are deep wells costing less but they are giving greater returns in oil and gas production. Thirteen new fields or new sands were discovered this year below 12,000 ft to add to the 21 already found.

For the first time in the history of the oil industry commercial production was found deeper than 14,000 ft

*Managing Editor.

Acknowledgment

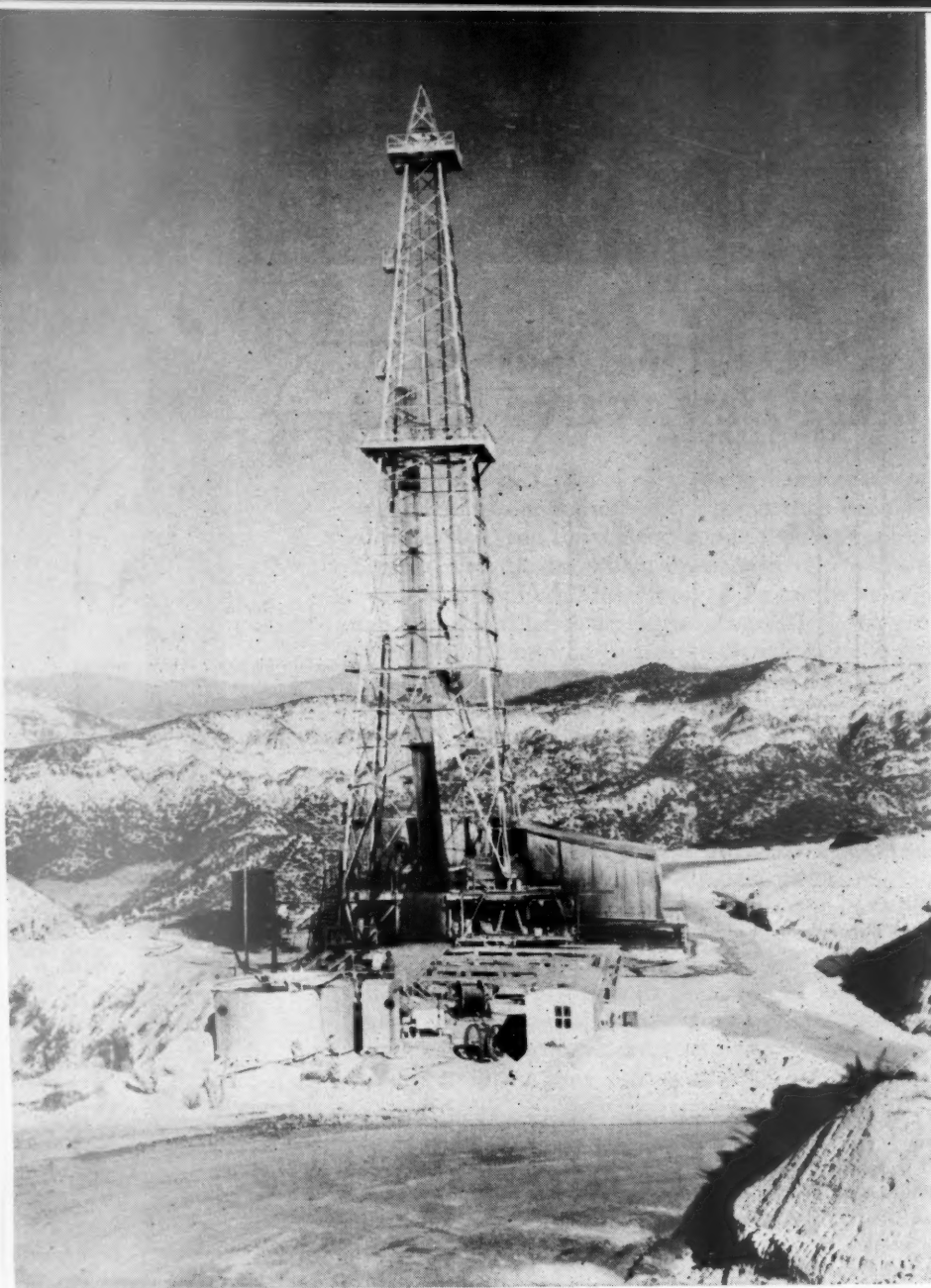
The descriptions of deep wells show the almost 100 per cent cooperation from companies that drill the deep ones. Our appreciation of this is increased by the fact that a majority of these also permitted us to use confidential cost figures for what is believed to be the most factual report on well costs available.

Dissemination of ideas on operations has been one safeguard of the development of the U. S. oil industry. Deep well information may help those pioneers who are hitting subterranean frontiers.

and before the year was out five separate fields had production at these new record depths.

The drill pierced the 12,000 ft mark 179 times in 1948 of which 145 wells were completed and 34 are still drilling or testing. This makes 610 wells that are 12,000 ft or more in depth.

This report must inevitably be full of figures to supply evidence of trends but the whole result is contained in the satisfying statement that when oil was needed the industry went deeper, found more oil in deep formations than ever before, and managed to do it a little cheaper.



Barnsdall's RSF 66-9 in Los Angeles County, California, is believed to have the deepest production known, 14,505 ft. Production of 50 bbl 28 gravity is not as much as that of Pure Poison Spider well, which held the previous record, but it has the deepest oil-producing sand, according to reports.

It is not recorded, but the 41 operators that drilled 1948 deep wells went about their duties more confidently because of the experience back of them and had the thrill of trying out new machinery and equipment designed especially for sinking the deep drill.

Economics

For the first time since 1942 average costs for drilling deep wells eased. Average cost of 145 completed deep operations in 1948 was \$334,000 per well as compared with \$363,000 in 1947. (Table 1.) Only one well cost below \$100,000; on the other hand none reported over the million dollar mark this year.

This lessening of costs has been due largely to greater knowledge of deep drilling problems and how to meet

them and to machinery and equipment better fitted to deep drilling.

Costs of deep drilling operations were reduced 8 per cent at the same time that costs of labor and equip-

TABLE 1. Number of deep wells and costs.

Year	Number deep wells in world	Estimated average cost per well in U. S.
1935	1	\$415,000
1937	5	320,000
1938	13	288,000
1939	26	251,000
1940	16	242,000
1941	19	185,000
1942	16	150,000
1943	17	244,000
1944	38	253,000
1945	69	303,000
1946	96	340,000
1947	115	363,000
1948	145	334,000
Drilling or Testing	34	
Total	610	

TABLE 2. 1948 deep well operators.

Operator	Number of Producing Wells	Total Deep Wells
J. S. Abercrombie Company and Magnolia Petroleum Co.	0	1
Amerada Petroleum Corporation	0	1
*Australasian Petroleum Co., Ltd.	0	1
Barnsdall Oil Company	1	1
Burton-Sutton Oil Company, Inc.	0	1
The California Company	2	4
*Francis Callery Oil Company	0	1
*Canadian Gulf Oil Company	1	1
Amon Carter Oil Company	0	1
*Chicago Corporation	1	2
Cities Service Oil Company	1	1
Continental Oil Company	0	1
Denver Producing and Refining Co.	1	1
*General Crude Oil Company	0	1
Gulf Oil Corporation	6	16
Humble Oil & Refining Company	4	15
Hunt Oil Company	1	3
Magnolia Petroleum Company	4	5
Mountain Fuel Supply Company	1	1
*Mid-Continent Oil Company	1	1
*Norton, Richard W.	0	1
Pan American Production Company	0	1
Placid Oil Company	0	2
Pure Oil Company	1	1
*Richardson and Bass	1	1
Shell Oil Company	5	15
Skelly Oil Company	0	1
Slick-Urschel Oil Company	1	1
Standard Oil Company of Ohio	2	2
*Sparton Drilling Company	1	1
Standard Oil Company of California	1	3
Stanolind Oil & Gas Company	3	12
Sun Oil Company	1	3
Superior Oil Company of California	2	6
The Texas Company	10	24
*Tex Harvey Oil Company	1	1
Tide Water Associated Oil Company	10	11
Union Oil Company of California	0	4
Union Producing Company	0	3
Western Gulf Oil Company	0	1
*Wilshire Oil Company	1	1
TOTALS	62	145

*Companies that have not had deep wells prior to 1948.

ment were rising and that average depth of wells increased.

Average depths in this type of well and costs per foot for the last five years run approximately like this:

Year	Average Depth	Average cost per foot
1944	12,671 ft	\$19.97
1945	12,854 ft	23.57
1946	12,776 ft	26.61
1947	13,004 ft	27.91
1948	13,064 ft	25.57

It is quite a feat to cut \$2.44 per foot from deep drilling costs under a steady pressure of rising prices.

Deep Production

No new depth record was made in 1948, Superior's Weller test in Oklahoma still retaining the title of deepest well with a total depth of 17,823 ft. The deepest production record, however, was passed not once but three successive times in 1948.

In June, Shell No. B-2 Smith-State found the first production below 14,000 ft in the Weeks Island field, Louisiana. It brought in 470 bbl oil 33 gravity and 475,000 cu ft of gas from 13,826-14,159 ft.

TABLE 2.
DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing and cementing schedule	Init. prod., grav., choke	Pressure, GOR	Remarks
12,000 10,413	6-1-48 12-23-48	Magnolia 1 Proctor	Company rig	Brooks, Tex.			41B 53.0° 1750 MCF	4200 GOR 35,900	Wildcat. New field.
12,001	12-31-48 7-25-48	Gulf 1 Henry Melancon	Company rig	St. Martin, La.	Olig. Marginulina	75' of 16" SW 38.5° 250 ax.; 2492' of 10 3/4" SS 40.5° 1000 ax.; 3400' of 5 1/2" SS 20°; 3900' of 5 1/2" SS at 11,713' 730 ax 17°; 4390' of 5 1/2" SS	307B 3/4" 229,636 CF 31.9°	11300 *10680 216 F GOR 748	Wildcat. Extension. Perf. 28 shots at 10,672-690' Faulted dome. 83 bits.
12,001	12- 8-48 8-24-48	Pan American 1 Leonie M. White	J. C. Hawkins Houston, Tex.	Leonville, St. Landry, La.	Cane River	64' of 16" SW 100 ax.; 1805' of 10 3/4" 40.5° 650 ax.; Plug. 200 ax	Dry		Wildcat. DT 98 days.
12,002	3-27-48 12- 2-47	Stanolind 1 P. H. Maraist	Company rig No. 20	St. Martin, La.		2467' of 10 3/4" 40.5°; 7" CSA 11,175'; 60' of 29°; 940' of 23°; 5650' of 23°; 2350' of 26°; 2000' of 29°	97B 1/4" 33.3°	11650, 1975, 5063, 1800, 220F, 11,070 GOR 680	Wildcat. New sand. Perf. 24 shots at 11,065-71'. Salt dome. 64 bits. DT 99 days.
12,008	9-17-48	Magnolia 1 Alvin Schubert		Driscoll Pasture, Nueces, Tex.			Dry		
12,009	9- 8-48 6-28-48	Stanolind 1 Powell Lumber	Loffland Bros., Houston, Tex.	Calcasieu, La.		10 3/4" 40.5° CSA 2020'; 7" CSA 9505'; 3400' of 23°, 3750' of 23°, 2350' of 26°	Dry		Wildcat. 62 bits. DT 72 days.
12,010	5-20-48 6- 9-47	Sohio C-1 Sweet Lake Land & Oil Co.	H. L. Edwards Drilling Co., Houston, Tex.	Bell City, Calcasieu, La.	Hayes sand Cibicides hazardii.	68' of 16" 38.5° 75 ax.; 2202' of 10 3/4" 40.5° 1000 ax.; 7" 23°, 26°, 29° at 11,272' 500 ax	10/61"	3000 178°	Wildcat. Discovered Bell City field. Anticline.
12,012		H. L. Hunt, et al 1-3 S. F. Wilson	Galveston, Tex.		Shale		Shut in		
12,012	7- 4-48 3- 4-48	Tide Water 67 Ventura Land & Water Co.		Ventura Ave., Ventura, Calif.			1201B 3/4" 1458 MCF 31.3°	10550, 11150	
12,022	12- 6-47 8- -47	Slick-Urschel 1 D. L. Alford	Iron Drilling Co. Tulsa, Okla.	Benedum, Upton, Tex.	Ellenberger Ellenberger	12,018' of 5"; 12,022' of 2"	833B 3/4" 3660 MCF 59°	102400, 11850, 12950, 2950, 5200, 9334 211F, GOR 4400	Wildcat. DT 6 years. Perf. 250 shots at 11,885-985'. Anticline.
12,026	3-20-48	Sun 4 Kenilworth Plantation		Kenilworth, St. Bernard, La.	Shale		Dry		
12,030	4-23-48 2-17-48	Texas 22 Falgout Holding	Hillburn Drig. Co.	Golden Meadow, Lafourche, La.	Shale Sd.	10 3/4" at 2479' 500 ax; 7" at 10,850' 1060 ax	240B 3/4" 35.4°	12650, GOR 2025	Per. 78 at 9779-92'
12,030	2-22-45 11- 6-44	California 1 Pallet.	Noble Drig. Corp. Tulsa, Okla.	Barataria, Jefferson, La.	Miocene	16" 65° 300 ax; 10 3/4" 40.5° 1500 ax; 7" 26°, 20°, 32°	362B 3/4" 241 MCF 34.6°	11990 *5065 236F *11,450 Present reser- voir pressure 4257 GOR665	Perf. 240 at 11,472-530: DT 90 days. 43 bits.
12,036	4- 5-48 12-27-47	Gulf 27 Delta Securities Co.	Gulf Production Division, Houston, Tex.	Bayou Couba, St. Charles, La.	Miocene	90' of 20" SS 48°; 1631' of 13 3/8" SS 54.5°; 840' of 12 3/8" SS 61°; 4323' of 9 5/8" SS 47°; 357' of 9 5/8" SS 43.5°; 506' of 9 5/8" SS 47°; 1788' of 9 5/8" SS 40°; 504' of 9 5/8" SS 40°; 1667' of 9 5/8" SS 47°	Dry		Wildcat. DT 100 days. 55 bits.
12,038	4- 9-48 10-19-47	Gulf A-31 M. P. Erwin	Gulf Production Division, Houston, Tex.	E. Hackberry, Cameron, La.	Dome material. Broken sand and shale	73' of 20" SW 48°; 1242' of 13 3/8" 61°; 1229' of 13 3/8" 54.5°; 2854' of 9 5/8" 47°; 375' of 9 5/8" 47°; 1267' of 9 5/8" 43.5°; 4687' of 9 5/8" 40°	147B 426,000 MCF 33°	11300 GOR 2897	Perf. 132 at 8756-78'. 40 bits.
12,047	10-14-48 8-22-48	Sun 1 Palfrey		St. Mary, La.	Miocene	16" 38.5° at 112'; 100 ax.; 10 3/4" 40.5° at 3140; 500 ax	Dry		Wildcat.
12,053		Tex-Harvey 1 B. W. Floyd- R. R. Comm.		Midland, Tex.			139B		
12,060	10-26-48 7-31-48	Shell 1-C Smith Unit	Company tools	Weeks Island, Iberia, La.			358B 195 MCF 34°	11625 GOR 544	Perf. 16 at 11,738-746'.
12,070	12-12-48 8-25-48	Tide Water 28 Hartman		Ventura Ave., Ventura, Calif.			1005B 20/64" 733 MCF 31.5°	10200, 11000	Deepened from 7607' on 8-25-48.
12,072	5-18-48 12- 8-47	Gulf 1-A L. L. & E., Little Lake	Rowan Drig. Co., Houston, Tex.	Little Lake, Jefferson, La.	Miocene Miocene sd.	110' of 20" SW 48°; 1211' of 13 3/8" SS 61°; 653' of 13 3/8" SS 54.5°; 956' 3920' of SS 47°; 1274' of SS 43.5°; 3986' of SS 40°; 5 1/2" 3747' of SS 20°; 3227' of SS 17°; 1566' of 17°; 1428' of 15.5°	142B 5,570 MCF 53.4°	13350, 3700, *9875, 186 F, GOR 39,200	Wildcat. Discovered Little Lake field. Perf. 30 at 9889-94'. 42 bits. Fault trap structure. DT 90 days.
12,100	2-27-48 9-21-47	Humble 1 South Mayes Unit	J. C. Means, Jr. Beaumont, Tex.	South Mayes, Chambers, Tex.	Frio Frio	2980' of 13 3/8" SS 61°; 10,036' of 9 5/8" SS 40° & 43.5°; 12,012' of 5 1/2" SS 20° & 23°	134B cond. 1334 MCF 47.8°	13870, 6220, *12,003, 255 F, *8070 GOR 10,000	Wildcat. Discovered new sd. Perf. 27 at 12,021-26'. 61 bits. Salt dome. DT 161 days. Deepest producing well in Texas.
12,102	4-12-48 1-26-48	Texas 6 State	Company tools	Horseshoe Bayou, St. Mary, La.	Sh. & lime Sd.	10 3/4" set at 2516', 500 ax; 7" set at 12,102', 750 ax	443B 10/64" 35°	11950	Perf. 84 at 11,990-12,004'.
12,107	6-14-48 7-28-48	Humble 1 St. Martin Land	Hawkins-Graham	Atchafalaya, St. Martin, La.		141' of 20" 48°; 2607' of 13 3/8" 61°; 6817' of 9 5/8" 40°	Dry		Wildcat. DT 120 days. 64 bits
12,113	12- 2-48 8-18-48	Humble 2 C. G. Hooks	Company rig	Avery Island, Iberia, La.		118' of 20" 48°; 1844' of 13 3/8" 61°; 9965' of 9 5/8" 40°	Dry		Wildcat. DT 107.5 days. 66 bits.
12,120	10-24-48 6-24-48	Humble 1-C Gulf Coast Realty Co.	Ballew	SW Lake Trafford, Collier, Fla.		63' of 20" 77°; 1102' of 13 3/8" 61°; 4998' of 9 5/8" 40°; 11,887' of 5 1/2" 17°	Dry		Wildcat. DT 126 days. 46 bits
12,141	-47	Superior 1 Draughn		12-3n-14w Forrest, Miss.	L. Cret.		Dry		Wildcat.
12,150	7-30-48 5- 3-48	California 50 Delta Farms	Loffland Bros. Tulsa, Okla.	Delta Farms, Lafourche, La.	Sdy. sh. Miocene	16" 65° 300 ax; 10 3/4" 40.5° 1250 ax; 7" 23°, 26°, 29° & 32° 600 ax	256B 1/8" 202MCF 34.5°	11450 *4045 179F 18880 GOR 789	Perf. 12 at 8920-22'. DT 45 days. 37 bits. Salt dome.

*Pressure is indicated by °flowing casing, †flowing tubing, ‡shut in casing, §shut in tubing, ¶initial reservoir, *datum. †Deep well not included in previous surveys.

DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing :		Init. prod., grav. choke	Pressure*, GOR	Remarks
							...ating schedule			
12,150	4-13-48 Deepened	Tide Water 17 Hartman	Company rig	Ventura Avenue, Ventura, Calif.	D-7 zone	6 3/4" set at 10,000'; 1572' of 4 1/2" set at 12,045'		1173B 3/4" 1058 MCF 32.6°	200, 1150	Production from 12,050'.
12,153	10-27-48 9-30-48	Union of Calif. 1 R. W. Collins	Dixie Drig. Co., Houston, Tex.	Houma, Terrebonne, La.		10 3/4" 40.5" CSA 2427', 1000 ax; 16" 62" CSA 97'		Dry		DT 23 days. 19 bits.
12,159	2-20-48 11-8-47	Sparton 4 B & D Unit	Sparton Drig. Co., Dallas, Tex.	Golden Meadows, Lafourche, La.	L. Miocene L. Miocene	16" 55" at 197', 150 ax; 10 3/4" 40.5" at 3025', 1000 ax; 7" 32", 29", 26" at 12,100' 1200 ax		363B 1 1/4" 429 MCF 36.8°	14000, 180 F, GOR 1173	Production from 11,803-07'. Faulted dome.
12,188	10-31-48 9-3-48	California 13 E. P. Brady	Loffland Bros. Tulsa, Okla.	S. Barataria, Jefferson, La.	Shale	16" 65" 250 ax; 10 3/4" 40.5" & 45.5" 1000ax		Dry		DT 52 days. 35 bits.
12,196	5-28-48 2-3-47	Texas 1-B Harrell	Lynn Drig. Co., Tulsa, Okla.	Stephens, Okla.	Simpson Bromide L. Tussy ad.	13 3/8" 48" at 722'; 7" at 10,325'; 3296' of 29", 2198' of 26", 4271' of 23", 470' of 32"		6B cond. 962 MCF GOR 160,333	900, 1850, 1400, 1100,	Wildcat. Discovered new sand. Anticline. Perf. 240 at 5035- 120'. DT 480 days.
12,202	11-15-48 5-30-48	Stanolind 1 E. S. Boyles	Company rig No. 18	Chocolate Bayou, Houston, Tex.	L. Frio L. Frio	2429' of 10 3/4" 40.5"; 11,630' of 7" 23"; 3900' of 23", 2300' of 26"; 2700' of 29"		32B 444 MCF	450, 1900 GOR 12,252	89 bits. DT 128 days. Perf. 46 at 11,537-49'.
12,226	4-17-48 8-10-47	Union Producing 3 Addie Durrett	Wheless Drilling Co.	Sugar Creek, Claiborne, La.	Smackover	175' of 16" 55", 150 ax; 3293' of 10 3/4", 1195' of 45.5"; 2097' 40.5", 325 ax		Dry		Wildcat. 64 bits. DT 232 days
12,240 11,523	11-20-48 2-22-48	Tide Water Ventura Land & Water Co.		Ventura Ave., Ventura, Calif.				286B 3/4" 267 MCF 26.4°	700, 1175	Deepened from 8555' on 2-22-48.
12,258	4-22-48 9-1-47	Mid-Continent 1-A U. D. Sawyer	McVay & Stafford Tulsa, Okla.	Crossroads, Lea, N. Mex.	Ellenburger	214' of 13 3/8" 40", 300 ax; 3706' of 9 5/8" 36", 2800 ax; 12,255' of 5 1/2" SS 20", 700 ax		3980B 3/4" 170 MCF 42.5°	615, 1415, 1733, 4698, 4863, 198 F, 12,175, GOR 43	Wildcat. Discovered Cross- roads field. Perf. 600 at 12,115- 215'. 195 bits.
12,273	6-16-48 12-20-47	Texas 7 Wood- ward, Kepper & Longmire	Bateman Drig. Co. New Orleans, La.	Bateman Lake, St. Mary, La.	Sdy. sh.	10 3/4" at 2561' 500 ax; 7" at 10,801 750 ax; 5" at 11,326' 300 ax		Salt water		Wildcat. Temporarily aband- oned. Extension.
12,285	2-12-48 8-16-47	Texas 1 State Willow Bayou	Cron & Gracey Drig. Co. Houston, Tex.	Willow Bayou, Cameron, La.	Shale	10 3/4" at 2659' 600 ax; 7" at 9860' 1000 ax.		Dry		Wildcat.
12,294	11- -48 4-16-48	Stanolind 2 E. M. Watkins	John W. Mecom Houston, Tex.	Florence, Vermilion, La.		2788' of 13 3/8" 54.5"; 10,055' of 9 5/8" 40" and 53.5"		Dry		Wildcat. DT 149 days.
12,308		Skelly 1 Sawyer		Lea, N. Mex.						
12,342	10-31-48 9-1-48	Texas 5 State Barataria	Company tools	Queen Beas Island, Jefferson, La.	Sh. & lime	13 3/8" at 2010' 500 ax		Dry		Wildcat.
12,344	3-28-48 11-10-47	Tide Water 40 Buras Levee Dist.		Venice, Plaquemines, La.	Sd & Sh. Sand	20" at 224' 250 ax; 13 3/8" at 2500' 700 ax; 9 5/8" at 9465' 1000 ax; 5 1/2" at 11,502' 1000 ax		260B 36.1°	11600 GOR 930	Perf. at 9872-74', 9916-18' and 9987-9917'.
12,345	3-5-48 1-25-48	Union of Calif. 1 Delta Securities	Dixie Drig. Co., Houston, Tex.	Lafourche, La.		10 3/4" 40.5" set at 2543', 1000 ax		Dry		Wildcat. DT 40 days. 36 bits.
12,355	3-21-48 12-23-47	Union of Calif. 3 City of N. Orleans	Loffland Bros., Houston, Tex.	Lafourche, La.		16" set at 169', 200 ax; 10 3/4" 40.5" set at 2479', 925 ax		Dry		Wildcat. DT 77 days. 51 bits.
12,366	7-24-48 3-1-48	Stanolind B-1 Wilberts Mineral	Dixie Drig. Co., Houston, Tex.	Bayou Blue, Iverville, La.		1225' of 13 3/8" 48"; 9 5/8" CSA 9223' 43" and 53.5"		Dry		Wildcat. DT 141 days. 67 bits
12,367	8-23-48 2-29-48	Humble 1 Rose H. Barnett	Rowan Drilling	Upland, Upton, Tex.		16" at 315'; 10 3/4" at 3757'; 7 5/8" at 8280'		Dry		Wildcat. DT 180 days. 217 bits.
12,386	12-30-48 7-25-47	Gulf 18 Lafourche Levee Dist.	Company rig	Lake Hermitage, Plaquemines, La.	Miocene	103' of 20" SW 48", 100 ax; 1201' of 13 3/8" SS 61"; 1311' of 13 3/8" SS 54.5", 1000 ax; 3144' of 9 5/8" SS 47"; 1229' of 9 5/8" SS 43.5"; 4815' of 9 5/8" SS 40", 1000 ax; 4233' of 5 1/2" SS 20"; 7496' of 5 1/2" SS 17" 500 ax		Dry		Wildcat. Dt 526 days. 139 bits.
12,389	1-12-48 9-14-45	*Stand'd of Calif. 73-30V Bolsa Chica	Rocky Mt. Drig. Co.	Kettleman Hills, Middle Dome, Kings, Calif.	Eocene Eocene	9 5/8" at 7585'; 6 5/8" & 7" at 12,072'; 4 3/4" at 12,276'		530B 47.2° 5230 MCF	2200 11900	Wildcat. Extension. Discovered new sand. Perf. at 12,075- 276'.
12,423	6-5-48 1-9-48	Humble B-4 E. B. Schwing	Company rig	Bayou des Glaise, Iberville, La.		120' of 20" 48"; 2554' of 13 3/8" 61"; 9523' of 9 5/8" 40"		Dry		DT 161 days. 91 bits.
12,442	8-6-48 5-18-48	Chicago Corp. 1 Liquidators	Loffland Bros., Tulsa, Okla.	Lafayette, La.	Frio	70' of 16"; 1996' of 10 3/4"; 10,775' of 7"		Dry		Wildcat. DT 80 days.
12,490	3-31-48 12-5-47	J. S. Abercrombie Co. & Magnolia 1 C. H. Maxwell	Company rig Houston, Tex.	Brazoria, Tex.	Frio	13 3/8" 54.5" at 1407', 450 ax; 9 5/8" 40" at 6972', 1000 ax		Dry		Wildcat. DT 118 days. 90 bits.
12,493 12,210	11-2-48 2-21-48	Magnolia 1 V. M. Powers		Chitwood, Grady, Okla.		13 3/8" at 731', 700 ax; 9 5/8" at 5445', 1000 ax; 7" at 12,120', 700 ax; 488' of 5" to 12,493', 75 ax		337B 1 1/4" 39.8°	12100 GOR 1250	
12,500	11- -48 5-26-48	Sun 1 Swift		South Melville, St. Landry, La.	Wilcox			190B 1 3/4"	3300	Wildcat.
12,502	6-27-48 3-8-48	Texas 5 Miami Fee Corp.	Loffland Bros. Tulsa, Okla.	Cameron Meadows, Cameron, La.	Sh. & lime	13 3/8" at 1847' 600 ax		Dry		Wildcat.
12,505	8-14-48 4-5-48	Stanolind 1 Miami Corp.	Noble Drig. Corp. Houston, Tex.	Cameron, La.	Shale	2300' of 10 3/4" 40.5"; 12,500' of 7", 4300' of 23", 1700' of 23", 2300' of 26", 2600' of 29", 1600' of 32"		Dry		Wildcat. DT 78 days. 72 bits.
12,505	9-14-48 3-2-48	Slick Urschel 1 Standifer	Hewgley Drig. Co. Midland, Tex.	Benedum, Upton, Tex.	Granite Ellenberger	7" at 11,109' 800 ax; 5 1/2" at 11,572' 100 ax; 4" at 12,505' 100 ax		1133B 3/8" 3955 MCF 60.3°	12500, 2950, 4942, 204F, 3540, GOR 3485	DT 180 days. Perf. 1010 at 11,280-490'. Anticline

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†Deep well not included in previous surveys.

DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing and cementing schedule	Init. prod., grav., choke	Pressure*, GOR	Remarks
12,505	8-21-46	Magnolia 2 Bolton		Glendale, Trinity, Tex.	Lime	20" at 89'-110'; 7" at 10,642'; 1000 sx	Shut in 3/8" 38,000 MCF		Wildcat. Discovered Glendale field.
12,507		¹ Skelly 1 J. G. Long		E. Bay City, Matagorda, Tex.					
12,516	9-21-48 4-22-47	Canadian Gulf 1 Pincher Creek	Parker Drlg. Co. of Canada, Tulsa, Okla.	Pincher Creek, Alberta, Canada	Madison Madison	7" 23", 26", 29", 32" at 11,755', 5000 sx; 5" 18" set at 12,500', 500 sx	385B cond. Shut in 9800 MCF 52.5"	² 2600, ³ 2000, ⁴ 3300, ⁵ 4800, ⁶ 7753, 184 F, GOR 25,440	Wildcat. Discovered Pincher Creek field. DT 425 days. 236 bits.
12,525	11-12-47 10- 2-47	Union of Calif. J. A. Theriot	Dixie Drlg. Co., Houston, Tex.	Houma, Terrebonne, La.		16" 38" at 139', 100 sx; 10 3/4" 40.5" at 2457', 1000 sx; 5 1/2" 17" at 10,408', 750 sx	Cond. Shut in	Present reser- voir pressure, 4582	26 bits. DT 36 days.
12,541	4-16-48	Richardson & Bass H.F. & A.D. Neal	Big West Drlg. Co. Ft. Worth, Tex.	Neal Ranch, Upton, Tex.	Ellenburger Penn.	9 5/8" at 8100'; 7" 20" at 11,977'	342B	¹ 375, ² 1125, GOR 1552	Wildcat. Discovered Neal Ranch field. Perf. at 10,020- 50'. DT 207 days.
12,548		Superior 1 McDaniel		Garvin, Okla.			Dry		
12,558	2- 3-48 8- 7-47	Amon Carter 1 Fee	Big West Drlg. Co. Dallas, Tex.	Winkler, Tex.	Ellenburger	256' of 20"; 2850' of 13 3/8"; 5330' of 9 5/8"	Dry		Wildcat.
12,564	7-22-48 1- 6-48	Shell 3 Myles Salt	Company tools	Weeks Island, Iberia, La.		16" at 118'; 10 3/4" at 4517'; 7 5/8" at 11,830'; 5" at 12,563'	400B 425 MCF 34"	¹ 2550 GOR 1060	Salt dome. Perf. 35 at 12,487 98'.
12,585 5,200		¹ Stewart et al 14 Fee		Hitchcock, Galveston, Tex.	Frio				
12,591 8,050	4-23-48 5-25-47	Cities Service 1-B Rogers	Loffland Bros., Tulsa, Okla.	Garvin, Okla.	2nd Bromide Deese	13 3/8" SS 48" at 512, 500 sx; 9 5/8" SS 36" and 40" at 5904', 500 sx; 7" SS 23" and 26" at 7975', 1350 sx	231B 1/2" 1150 MCF 43.4"	¹ 200, ² 1500, ³ 2450, ⁴ 6900, GOR 1150	Wildcat. Discovered new field. DT 334 days. 202 bits.
12,611	7-20-48 5-16-48	California 1 State lease 816, block 24	Noble Drlg. Corp. Tulsa, Okla.	Plaquemines, La.	Shale	16" 65" 550 sx; 10 3/4" 40.5" 1490 sx	Dry		Wildcat. DT 62 days. 40 bits.
12,620	8- 3-48 3-21-48	Tide Water 23 McGonigle		Ventura Ave., Ventura, Calif.			1077B 3/4" 814 MCF 31.3"	¹ 700, ² 1200	
12,621	3- -48	Australasian Pet. 1 Kariava		Papua, New Guinea			Dry		Wildcat.
12,644	3-15-48 1-10-48	Humble 12 Louisiana Furs	Company rig	Pecan Island, Vermilion, La.		16" 48" at 108'; 10 3/4" at 2499'	Dry		DT 65 days. 34 bits.
12,656	8- 2-48 11-27-47	Texas 11 State Rabbit Island	Loffland Bros. & Company rig	Rabbit Island, Iberia, La.	Sh. & lime Sand	13 3/8" at 2589' 650 sx; 9 5/8" at 11,462' 1200 sx; 7" at 12,594' 300 sx	10,300 MCF 1/2"	¹ 7000, ² 8150	Wildcat. Discovered new sand Perf. 38" at 12,436-46'.
12,675	7- 2-48	Hunt 1 Ardis Burns		Webster, La.	Shale		Dry		Wildcat.
12,677	6- 5-48 3-15-48	Humble B-1 Louisiana Furs	Company rig	Pecan Island, Vermilion, La.	Sand	20" 48" at 90'; 13 3/8" 61" at 2519'; 7" at 12,267'	115B Shut in 4800 MCF 1/2" 50.3"	¹ 3800 GOR 41,740	Wildcat. DT 85 days. 38 bits.
12,710	5-14-48 12-21-47	Tide Water 74 Ventura Land & Water Co.		Ventura Ave., Ventura, Calif.			984B 3/4" 710 MCF 34.3"	¹ 900, ² 1150	
12,760	7- 4-48 10-13-47	Stanolind 1 G. W. Henry	C. G. Glasscock Corpus Christi, Tex.	Tilden, McMullen, Texas		1480' of 13 3/8" 54.5"; 9 5/8" CSA 7520'; 86' of 53.5"; 2850' of 40"; 4490' of 40"; 74' of 40"	Dry		Wildcat. DT 243 days. 104 bits.
12,776	10- -48 12- 1-46	Stanolind 1 Huebner	Company rig	Lucky, Matagorda, Tex.	Sloan sand Frio sand	10 3/4" 40.5" CSA 1538'; 6970' of 9 5/8" 23" and 26"	79B 124 MCF 34"	¹ 890, ² 949 GOR 1570	Wildcat. Extension. DT 125 days. 40 bits. Anticline.
12,780	3-24-48 11- 7-47	Texas 1 Luke Guidroz	Nicklos Drlg. Co.	Valentine, Lafourche, La.	Shale Sand	13 3/8" at 3141' 500 sx; 7" at 11,621' 1000 sx	25B 1/2" 4860 MCF 51.4"	¹ GOR 194,500	Wildcat. Perf. 192 at 11,036- 91'. Discovered new sand. Ex- tension.
12,786	9-21-48 4-25-48	Humble 6 Henry L. Cordis	Allen & Morris	Flour Bluff, Nueces, Tex.	Sand		Shut in		Wildcat. DT 157 days. 91 bits. Discovered new sand.
12,792	1948 10- 5-47	¹ Western Gulf 74-1 Paloma Unit	Loffland Bros. Los Angeles, Calif.	Paloma, Kern, Calif.	Miocene	13 3/8" at 1254', 7" at 11,892'	Dry		Anticline
12,795	12-31-48 7-10-48	Tide Water 77 Ventura Land & Water Co.		Ventura Ave., Ventura, Calif.			1044B 3/4" 840 MCF 31.9"		
12,850	10- 3-48 6-19-48	Shell 3 Dugas & Le Blanc	Cron & Gracey	Napoleonville, Assumption, La.		16" at 108', 200 sx; 10 3/4" at 3017', 600 sx	Dry		
12,887	8-11-48	Hunt 1 E. W. Finney		Terrebonne, La.	Salt water		Junked		Wildcat.
12,888	5- 1-48 12-27-47	California 14 Delta Farms	Noble Drlg. Corp. Tulsa, Okla.	Delta Farms, Lafourche, La.	Miocene	16" 65" 300 sx; 10 3/4" 40.5" & 45.5" 1250 sx; 7" 23", 26", 29", & 32" 1000 sx	240B 279 MCF 1/2" 23.1"	¹ 900 GOR 1162	DT 104 days. 70 bits. Perf. 48 at 11,811-19'. Salt dome.
12,905	11-21-48 6- 9-48	Tide Water 25 McGonigle		Ventura Ave., Ventura, Calif.			1362B 1 1/4" 1031 MCF 32.7"	¹ 1700 ² 1800	
12,950	4- 1-48 6- 2-47	Gulf 1 Cleobule Hernan- dez	Loffland Bros. Houston, Tex.	Lafayette, La.	Mio. wet	104' of 20" SW 48" 250 sx; 1221' of 13 3/8" SS 61"; 1294' of 13 3/8" SS 54.5", 1200 sx; 3708' of 9 5/8" SS 47"; 760' of 9 5/8" SS 40"; 1000 sx; 3072' of 5" SS 18"; 4499' of 5 1/2" SS 20"; 4607' of 5 1/2" SS 18", 225 sx	Dry		Wildcat. DT 164 days. Faulted dome.
12,963	10-21-48 7-22-48	Shell B-3 Smith State		Weeks Island, Iberia, La.			389B 455 MCF 34"	¹ 2550 GOR 1169	Perf. 40 at 12,858-68'. Salt dome.

*Pressure is indicated by ¹flowing casing, ²flowing tubing, ³shut in casing, ⁴shut in tubing, ⁵initial reservoir, ⁶datum.

¹Deep well not included in previous surveys.

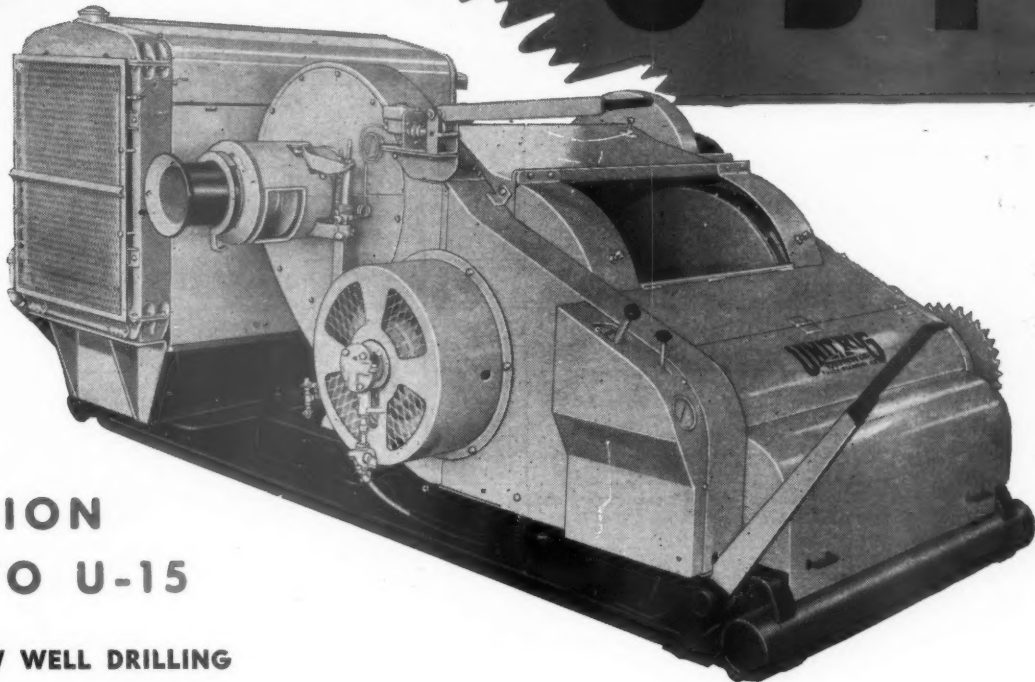
²Well listed but not described in 1947 survey.

DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing and cementing schedule	Init. prod., grav., choke	Pressure*, GOR	Remarks
12,975	3-3-48 10-19-47	Gulf 1 M. D. Riley	Roeser & Pendleton, Shreveport, La.	Heidelberg, Jasper, Miss.	L. Cret.	20" 78.6" set at 51', 75 sx; 13 3/8" SS 54.5", 61" and 72", set at 1568', 1000 sx	Dry		Wildcat. DT 143 days. 74 bits.
12,981	2-4-48 9-4-47	Humble 14 Petit Anse	Company rig	Avery Island, Iberia, La.		120' of 20" 48"; 2468' of 13 3/8" 61"; 10,491' of 9 5/8"	Dry		DT 141 days. 73 bits.
12,984	12-9-48 4-30-48	Gulf 1 S. S. Perry	Nickols Drlg. Co., Houston, Tex.	Peach Point, Brazoria, Tex.	Marginulina- Texana Marginulina- Texana	119' of 20" SW 48", 180 sx; 971' of 13 3/8" SS 61"; 2438' of 13 3/8" SS 54.5", 2400 sx; 2461' of 9 5/8" SS 47"; 4665' of 9 5/8" SS 43.5", 800 sx; 10,812' of 7" 26", 550 sx; 11,431' of 5 1/2" SS 18", 150 sx; 11,199' of 2 3/4" SS 6.4"	Closed in	17000, 48375, 229 F	Wildcat. Discovered Peach Point field. Faulted dome. DT 200 days. 71 bits. Perf. 280 at 11,278-348'.
13,000	4-7-48 11-19-47	Gen'l Crude B-21 Sun-Stanolind Esperson Fee	Company rig Houston, Tex.	S. Esperson, Liberty, Tex.	Salt	1371' of 13 3/8" 48"; 1803' of 9 5/8" 40"; 7075' of 9 5/8" 40", 800 sx	Dry		DT 138 days.
13,000	1-30-48 10-28-47	Gulf 1 W. P. Foster	Rowan Drilling, Houston, Tex.	Franklin, St. Mary, La.	Miocene	119' of 20" SW 48"; 1372' of 13 3/8" SS 61", 1128' of 13 3/8" SS 54.5"; 3077' of 9 5/8" 47", 1012' of 9 5/8" 43.5"; 5034' of 9 5/8" 40"	Dry		Wildcat. DT 94 days. 64 bits.
13,006	8-48	W. T. Burton I. S. J. Simmonex	Company rig	Des Allemands, St. Charles, La.	Planulina harangensis	4000' of 10 3/4" 40.5", 2000 sx	Dry		Wildcat.
13,014	6-25-48 4-2-48	Gulf 60 La. State "QQ"	Gulf Production Division, Houston, Tex.	Quarantine Bay, Plaquemines, La.	Miocene Miocene	75' of 20" SW 48"; 840' of 13 3/8" SS 54.5"; 1271' of SS 13 3/8" 61"; 361' of 13 3/8" SS 13 3/8" 61"; 361' of 13 3/8" SS 68"; 4938' of 9 5/8" SS 47"; 2390' of 9 5/8" SS 47"; 1849' of 9 5/8" SS 40"	229B 28.2"	1875 GOR 366	Wildcat. Extension. DT 85 days, 32 bits. Perf. 72 at 8330-40'. Salt dome.
13,016	9-23-48 2-23-48	Mt. Fuel Supply 4 Unit	San Joaquin Drilling Co., Los Angeles, Calif.	Church Buttes, Sweetwater, Wyo.	Morrison Dakota	13 3/8" SS 61" at 313', 220 sx; 9 5/8" 40" and 43.5" at 7015, 3000 sx; 6 5/8" 24", 28" and 32" at 12,768', 2000 sx	29,600 MCF 1/2"	45625 7100 est, 230 F	Wildcat. Extension. 224 bits. Anticline.
13,046 10,672	2-17-48 3-7-47	Magnolia et al Lillian Miller	Company rig	Caddo, Okla.	Penn. Penn.	20" at 148', 150 sx; 13 3/8" at 1785', 1500 sx; 9 5/8" at 10,470', 1000 sx; 7" at 13,046', 500 sx	195B 1/4" 44"	1875 GOR 2790	Wildcat. Discovered new field.
13,067	7-1-48 1-6-48	Texas 110 LL&E Leeville	Hillburn Drlg. Co.	Leeville, Lafourche, La.	Shale	13 3/8" at 3069' 500 sx; 8 5/8" at 11,762' 1000 sx	Dry		Wildcat.
13,067	11-16-48 5-22-48	Sohio 1 S. W. Sweeney	Meredith Clegg & Hunt	Hog Bayou, Cameron, La.	Miocene	16" SW 38.5" set at 60', 75 sx; 10 3/4" 40.5" set at 2577', 1000 sx; 7" SS 23", 26" and 29" at 11,282', 1200 sx	No test	3000, 11,007 192 F	Wildcat. Discovered Hog Bayou field. Anticline. DT 170 days. Perf. 200 at 8250-75'.
13,100	12-23-47 10-26-46	Gulf & Magnolia 1 Ida	Parker Drlg. Co., Tulsa, Okla.	Chitwood, Grady, Okla.	Penn. sand Penn. sand	5 1/2" 18" at 13,100', 180 sx; 7" at 11,660', 1000 sx; 23", 26", 29", and 32"	80B 450 MCF 40.9"	500, 150, 2000, 2200, 6500, 10,870 185 F GOR 5600	Wildcat. Extension. Perf. at 11,980'-12,000'. 191 bits. DT 341 days.
13,103	11-22-48 2-9-48	Gulf 18-3B-VA	H. L. Kellog & Sons, Compton, Calif.	Buena Vista, Kern, Calif.	Miocene	7", 26", 29", and 32" cemented at 10,764'	Dry		Wildcat. DT 266 days. 276 bits.
13,110	1-22-48 11-26-47	F. A. Callery I. E. P. Brady	Bankhead Drl. Co. Baton Rouge, La.	Lapeyrouse, Terrebonne, La.	Miocene	162' of 16" SW 43.5", 150 sx; 3482' of 10 3/4" SS 40.5", 200 sx	Dry		Wildcat. DT 58 days. 38 bits. Faulted fold.
13,132	9-20-48 4-29-48	Gulf 1-A E.H. Lindsey et al	Steen Drlg. Co., Houston, Tex.	Fannett, Jefferson, Tex.	Frio	103' of 20" SW 48", 155 sx; 1807' of 13 3/8" 54.5", 1400 sx; 2479' of 9 5/8" SS 47"; 4973' of 9 5/8" SS 43.5"; 998' of 9 5/8" SS 40", 1000 sx	Dry		DT 154 days. 50 bits.
13,175	5-15-48 8-19-47	Continental L-2 KCL	Coastal Drlg. Co. Los Angeles, Calif.	Kern, Calif.	Stevens sd.	13 3/8" 61"; 7" 23" to 32"	Dry		Wildcat. DT 224 days. 152 bits.
13,213	5-9-48 5-1-47	Tide Water 36 Buras Levee Dist.		Venice, Plaquemines, La.	Sand	24" at 103' 200 sx; 20" at 223' 300 sx; 13 3/8" at 2490' 700 sx; 9 5/8" at 9498' 1000 sx; 7" at 12,552' 1000 sx	422B 36.2"	13950 GOR 1490	DT 373 days. Perf. at 12,765 842'.
13,230	11-11-48 5-16-48	Superior 1 LLE State Unit 19	Company rig	Four Isle, Terrebonne, La.	Miocene Miocene	18" at 131' 225 sx; 11 3/8" 47" at 2101' 1200 sx; 7 5/8" 33" & 39" at 12,015' 1300 sx	294B 344 MCF 35"	12400 GOR 1170	Perf. 40 at 12,210 to 12,220'. Discovered new sand. DT 162 days.
13,250	10-19-48 12-31-47	Gulf 1 Mainka	Vierson & Cochran Okmulgee, Okla.	Northeast Bradley, Grady, Okla.	Bromide Bromide	7" 26" and 29" at 13,140', 1000 sx	470B 790 MCF 46.5"	12400, 12700, 2600, 6000, 12,030, 206 F GOR 1700	Wildcat. Discovered North- east Bradley field. DT 270 days. 187 bits. Plan to deepen.
13,285	3-10-48 12-23-47	Union of Calif. 1 State L. L. & E., Unit 8	Loffland Bros., Houston, Tex.	Bay Junop, Terrebonne, La.		16" at 169', 200 sx; 10 3/8" 40.5" at 2985', 1500 sx	Dry		Wildcat. DT 77 days. 50 bits.
13,303	6-24-48 11-11-47	Stanolind 1 Robt. D. Trahan	Falcon Seaboard Drlg. Co., Houston, Tex.	E. Florence Vermilion, La.		10 3/4" 40.5" CSA 2994'; 7" 32" and 29", CSA 11,096'	Dry		Wildcat. DT 138 days. 106 bits.
13,316	11-14-48 7-3-48	Humble C-1 La. Furs	Company rig	West Esther, Vermilion, La.		20" 48" at 91'; 13 3/8" 61" at 1901'; 9 5/8" at 9000'			Wildcat. DT 139 days. 77 bits.
13,335	2-27-48	Placid 1 Walters	Penrod Drlg.	Jones, Miss.					
13,359	5-13-48 7-11-47	Stanolind 1 J. E. Mabee	Guy Mabee	Martin, Tex.	Ellenburger	9 5/8" 36" and 32.3" CSA 3991'	Dry		Wildcat. DT 307 days. 151 bits.
13,427	2-11-48 11-2-47	Humble 2 Saus Ranch- Tenerias	Company rig	Saus Ranch, Willacy, Tex.		20" at 85'; 13 3/8" at 2994'; 9 5/8" at 8608'	Dry		Wildcat. DT 109 days. 63 bits.

*Pressure is indicated by ^cflowing casing, ^fflowing tubing, ^sshut in casing, ^ashut in tubing, ⁱinitial reservoir, ^ddatum.

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DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing and cementing schedule	Init. prod., grav., choke	Pressure*, GOR	Remarks
13,468	1-5-48 6-25-47	Texas 5 City of N. Ori'ns	Hillburn Drig. Co.	Leeville Lafourche, La.	Sand Sand	10 3/4" at 2681' 500 sx; 7" at 11,096' 1000 sx; 5" at 13,408' 150 sx	146B 1/4" 47.9"	11400 GOR 11,721	Wildcat. Extension. Discover- ed new sand. Perf. 30 at 12, 980-985'.
13,471	10-13-48 7-22-48	Tide Water 1 Lafourche Rlty.		Plaquemines, La.	Shale	20" at 102' 200 sx; 13 3/4" at 2010' 800 sx; 9 3/4" at 8454' 1000 sx	Dry		Wildcat. DT 82 days.
13,497	3-15-48 9-21-47	Humble 1 Humble Fee-Gulf	Company rig	Weeks Island, Iberia, La.		20" 48" at 85'; 13 3/4" at 2580'; 9 3/4" at 11,388'	250B 3/8" 155 CF 24.8"	11000 GOR 600	Wildcat. Extension. DT 175 days. 69 bits.
13,503	3-9-48 5-3-47	Gulf 3-A W. H. Smith-R. S. Jackson "A"-3	L. D. Cain Drig. Co., Houston, Tex.	Fannett, Jefferson, Tex.	L. Frio L. Frio	110' of 20" SW 48", 160 sx; 1778' of 13 3/4" SS 54.5", 800 sx; 3140' of 9 3/4" SS 47"; 5172' of 9 3/4" SS 43.5", 800 sx; 3848' of 5 1/2" SS 20"; 7292' of 5 1/2" SS 17", 550 sx; 10,998' of 2" SS 4.7"	126B 3/8" 6,219,919 CF 47"	13250, ^4255, ^5385, *11,050 190 F GOR 49,365 Present reserv- oir pressure, 4255	Wildcat. Extension. DT 285 days. 139 bits.
13,524	5-27-48 7-20-47	Amerada 2 H. S. Record	Rowan Drig. Co., Ft. Worth, Tex.	Monument, Lea, N. Mex.	Devonian	245' of 16" 65"; 4443' of 11 3/4" 47"	Dry		Wildcat. DT 310 days. 328 bits. DST taken to 13,508'.
13,524 Old TD 11,157	5-19-48 12-23-47	Gulf & Placid 1 B. L. Sholar	Lyle Cashion, Inc. Laurel, Miss.	Jones, Miss.		52' of 20" 78.6", 100 sx; 1609' of 13 3/4" 54.5" and 61", 1000 sx	Dry		Abandoned by Gulf at 11,157'. Deepened by Placid to 13,524'. Wildcat.
13,530	9-7-48 2-27-48	Chicago Corp., 1 Eli Heinsahn	Loffland Bros., Tulsa, Okla.	Corpus Christi, Nueces, Tex.	Frio	16" at 64'; 10 1/2" at 2357'; 7" at 9995'; 5" at 13,159'			Discovered new sand. Produc- tion from 8600'. DT 132 days.
13,570	1-29-48 10-16-47	Union Prod. 3 Buckley-Bourg	Loffland Bros.,	Delarge, Terrebonne, La.	Miocene	16" 55" at 171' 125 sx; 10 3/4" 51" at 1209'; 10 3/4" 51" at 1961', 40.5" at 4502' 1500 sx	Dry		Wildcat. DT 68 days.
13,603	7-15-48	McCarthy 1 E. H. Niedring- haus		, Tex.			1/4"		
13,628	7-2-48 8-23-47	Superior-1 A State Gulf of Mexico	Company rig	Vermilion Block 71, Vermilion, La.	Miocene Miocene	20" at 168'; 13 3/4" 54" at 2530' 1425 sx & 75 sx at top; 9 3/4" 53.5" & 47" at 10,163' 1200 sx; 7" 29" & 35" at 12,926' 450 sx	53B 3/8" 5911 MCF 51.4"	13790 GOR 110,838	Wildcat. Discovered new field. Perf. 9608-9618'. DT 115 days
13,636	11-7-48 10-11-47	Magnolia 1 State see 838, blk 45	Company rig	(Gulf of Mexico), Iberia, La.	Sdy. sh.	20" at 420'; 13 3/4" at 2328'; 9 3/4" at 8207'	51B 3/8" 45.5"	1920 GOR 180,000	Wildcat.
13,687	4-29-48	Texas 12 State- Cote Blanche La.	Company rig	Cote Blanche Island, St. Mary, La.	Sh.	13 3/4" at 2494' 600 sx; 8 3/4" at 12,094' 1200 sx; 5 1/2" at 13,388' 275 sx	7700MCF 3/4"	12250, ^4800	Wildcat. Discovered Cote Blanche Is. field. Perf. 13,300- 58'.
13,741	7-15-48 3-8-48	Texas 2 Mary S. Nelson	Cron & Gracey Drig. Co. Houston, Tex.	Point-au-Fer, Terrebonne, La.	Shale	13 3/4" at 1825' 550 sx; 9 3/4" at 12,014' 1250 sx	Dry		Wildcat.
13,760	7-19-48 1-21-48	Texas 20 Sunset Realty & Planting Co.	Loffland Bros. Tulsa, Okla.	Paradis, St. Charles, La.	Salt Sand	13 3/4" at 3034' 1000 sx; 8 3/4" at 11,281' 1000 sx; 5 1/2" at 1250' 275 sx	48B 1641 MCF 51.8"		Wildcat. Extension. Discover- ed new sand. Perf. 241 at 11,042-102'.
13,822 12,800 9450	3-19-48	Gulf 1-E W. Bryant	Rowan Drig. Co., Ft. Worth, Tex.	Midland, Tex.	Ellenburger	2500' of 29"; 1400' of 26"; 2000' of 23"; 2100' of 26"; 3100' of 29"			DT 233 days. 212 bits.
13,823	6-8-48 7-10-47	R. W. Norton, Jr 5 Dantzier Lbr. Co	H. I. Morgan, Shreveport, La.	Stone, Miss.		60' of 16", 60"; 2490 of 10 3/4" 40.5"	Dry		Wildcat. 74 bits. DT 233 days. Deepened 4-8-48 from 11,502'.
13,825		Placid 1 Otho Shows	Penrod Drig. Co.	Jones, Miss.			Dry		
13,857	10-24-46 6-17-48	Placid 1 DuPont		Lapeyrouse, Terrebonne, La.	Miocene ad. Miocene	13 3/4" at 2675'; 7" at 12,303'; 3 1/2" at 12,076'	11B 1 3/4" 3235MCF 60"	13840, 14700 GOR 29,050	
13,977	9-3-48 1-2-48	Wilshire 1 McElroy	Louis Mabec and Wilshire rig, Midland, Tex.	Wilshire Upton, Tex.	Ellenburger Wolfcamp	13 3/4" at 557'; 9 3/4" 36.6" at 5195', 1500 sx; 5 1/2" 17" and 20" at 10,797', 800 sx	240B 35 MCF	2850, 11200	Wildcat. Discovered Wilshire field. Perf. 200 at 7750-9000'.
14,000	3-29-48 11-15-47	Humble 2 J. M. Burquieres Co.	Ballew Drig.	St. Mary, La.		20" at 72'; 13 3/4" at 1132'; 9 3/4" at 8827'	Dry		Wildcat. DT 140 days. 96 bits
14,000	12-22-47 9-9-47	Shell 1 Smith- State Unit B	Company tools	Weeks Island, Iberia, La.		16" at 120'; 10 3/4" at 4506'; 7" at 13,999'	476B 630 CF 33"	GOR 1340	DT 92 days. 65 bits. Pierce- ment type salt dome. Perf. 64 at 13,846-62'.
14,004 8,433	3-10-44 10-24-43	Shell 11 Central Coal & Coke Corp.	Company tools	Mercy, San Jacinto, Tex.	Shale	16" at 40'; 10 3/4" at 2999' 400 sx; 7 3/4" at 8587' 500 sx	13.7B 38"		Perf. 16 at 8372-77'
14,023	7-30-48 2-7-48	Texas 1 Cameron County Water & Imprvm't Dist 5	J. C. Hawkins Co.	Cameron, Tex.		13 3/4" at 1087'; 720 sx; 9 3/4" 43.5" at 7504', 800 sx	Dry		Wildcat. DT 174 days.
14,065	9-28-48 5-25-48	Superior 1 M. G. Johnson	Company rig	Matagorda, Tex.	Frio	20" at 82' 280 sx; 11 3/4" 47" at 1484' 937 sx; 7 3/4" 39" & 33.7" at 11,171' 1000 sx	Temp. aban- doned.		Wildcat. DT 105 days.
14,137	9-26-48 3-18-48	Texas C-1 Bay St. Elaine, see 1246	Company rig	Bay St. Elaine, Terrebonne, La.	Sh. & lime Sand	10 3/4" at 2027' 500 sx; 7" at 12,005' 1000 sx; 5" at 14,137' 180 sx	78B 3/8" 2885 MCF 47.3"	14500 GOR 36,984	Wildcat Extension. Discover- ed new sand. Perf. 332 at 13, 718-64'.
14,147	2-26-48 9-24-47	Stanolind 2 State see 739	Noble Drig. Corp., Tulsa, Okla.	S. Timbalier Bay, Terrebonne, La.		13 3/4" 54.5" and 61" CSA 2502'; 9 3/4" 40" and 53.5" CSA 6940'	Dry		Wildcat. DT 152 days. 48 bits
14,251	9-10-48 4-22-48	Texas et al 1-D Point-au-Fer	Loffland Bros.	Point-au-Fer, Terrebonne, La.	Sh. & sd.	13 3/4" at 1398' 500 sx; 9 3/4" at 12,153' 1250 sx	Dry		Wildcat.
14,296	6-5-48 1-17-48	Superior 4 Cont. Ld & Fur	Company rig	Bayou Penchant, Terrebonne La.	Miocene	16" at 146' 250 sx; 13 3/4" 53.5" at 1952' 1250 sx; 9 3/4" 53.5" at 11,009' 1200 sx	Dry		DT 120 days.

*Pressure is indicated by flowing casing, §shut in casing, ^shut in tubing, @initial reservoir, *datum.

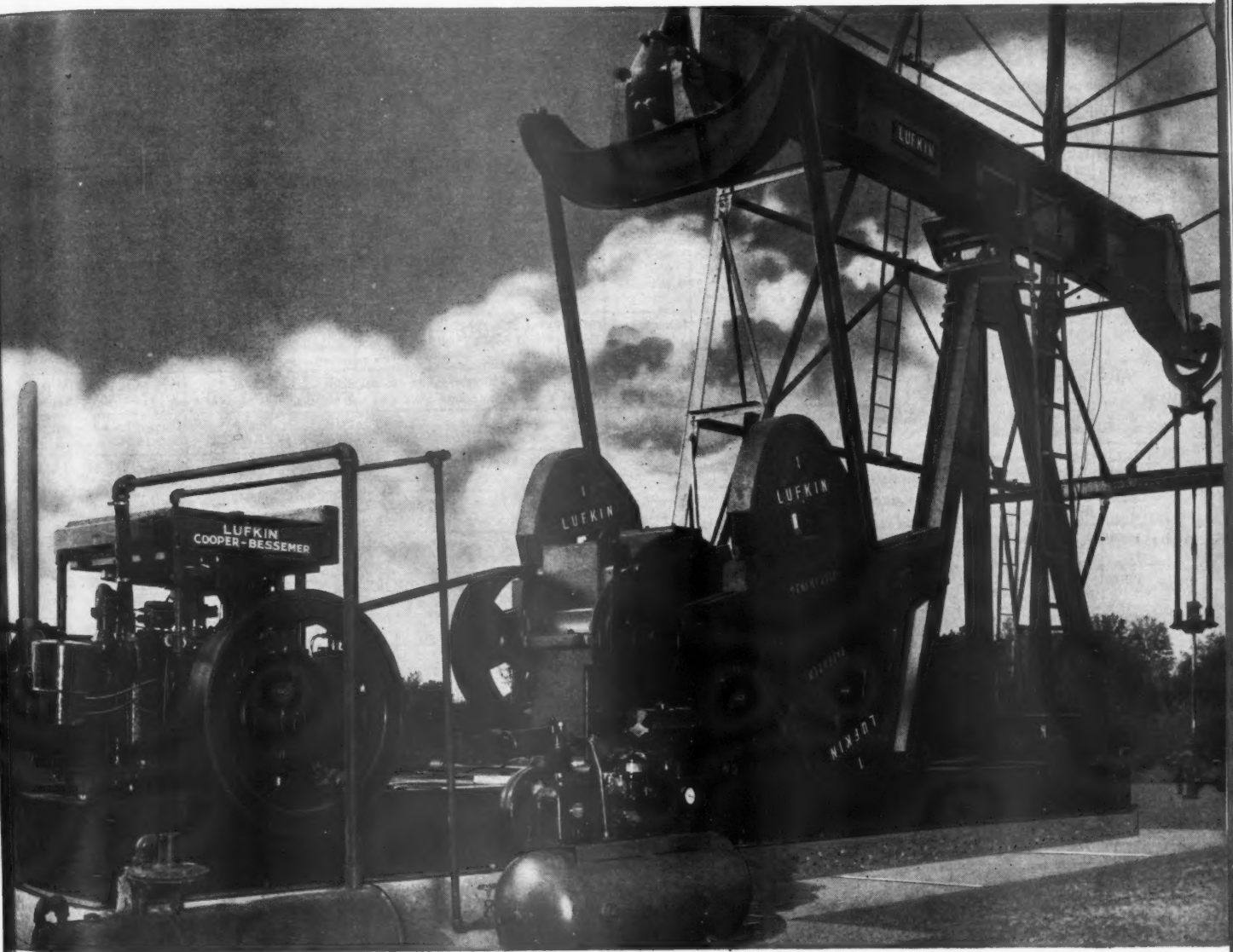
1 Deep well not included in previous surveys.

2 Well listed, but not described in 1947 survey.

3 1944 deep well deepened in 1948.

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DESCRIPTIONS OF WELLS DRILLED BELOW 12,000 FT IN 1948

TD, ft PB, ft	Compl't'd Spudded	Company and name of well	Drilled by	Field and location	Deepest form. Prod. form.	Casing and cementing schedule	Init. prod., grav., choke	Pressure*, GOR	Remarks
14,309	7-10-48 8-12-47	Pure 1 West Poison Spider Unit	Loffland Bros., Tulsa, Okla.	Natrona, Wyo.	Frontier Frontier	13,791' of 7" SS 35*, 32* and 29*	898B 3/4" 1800 MCF 43.6°	°200, °110, °5823, *8350, 226 F GOR 2004 Present reser- voir pressure, 5823	Wildcat. Discovered new field. Anticline. 187 bits. Production from 14,309'. Deepest oil production in Wyoming.
14,318	7-10-48 10-23-47	Texas 1 Dugas & LeBlanc Ltd.	Falcon Seaboard Drig. Co. Houston, Tex.	Napoleonville, Assumption, La.	Shale	11 3/4" at 2795' 500 sx; 7 7/8" at 12,021' 1000 sx; 5" at 12,602' 120 sx	Dry		Wildcat.
14,413	4- 7-48 6-12-47	Texas 2 Realty Operators	Wheless Drig. Co.	Convent, St. James, La.	Sd. and sh.	13 3/8" at 2959', 500 sx; 8 5/8" at 11,485', 1000 sx	Plugged and abandoned		
14,444	5-15-48 10-13-47	Standard of Calif. 1-1 Houghton Comm.	Rocky Mt. Drig. Co., Los Angeles, Calif.	Santa Fe Springs, Los Angeles, Calif.	Miocene		Dry		Wildcat. DT 215 days. Anticline nose or flank.
14,465 Old TD 13,586 11,575	9-15-48 3-25-48	Union Prod. 2 Buckley-Bourg	Loffland Bros.,	Delarge, Terrebonne, La.	Miocene	7" 32* at 13,631', 125 sx	Dry		Wildcat. DT 172 days. De- pleted oil well reworked and completed as dry hole.
14,473	7-26-48 2-19-48	Texas 111 LL&E Leeville	Hillburn Drig. Co.	Leeville, Lafourche, La.	Sh. & lime Sand	13 3/8" at 2612' 500 sx; 9 5/8" at 11,529' 1000 sx; 7" at 14,173' 129 sx	319B 1/2" 28°	°2100 GOR 703	Wildcat. Extension. Discov- ered new sand. Perf. 14,082- 75'.
14,498	11- 4-48 7- 3-47	Texas 1 Yates	Parker Drig. Co., Tulsa, Okla.	Caddo, Okla.		13 3/8" at 1347', 1400 sx; 9 5/8" at 6001', 900 sx	Dry		Wildcat. DT 490 days. 290 bits.
14,513	12-27-48 9- 4-47	Barnsdall RSF 66-9	Company rig	Newhall-Potrero, Los Angeles, Calif.		401' of 13 3/8"; 7" 31*, 29*, 26*, and 23* at 10,668'; 4 1/2" 16.6* at 14,505'	50B 28°	°700, °110	Discovered new sand. Perf. 2660 shots at 13,940'-14,505'. Deepest production in world in 1948. Anticline.
14,553	4-11-48 8-10-47	Humble 1 State Calcasieu Lake, lease 1256	Company rig	Cameron, La.	Discorbis	20" SS 94* at 177'; 13 3/8" SS 61* at 2583'; 9 5/8" SS 40* at 8553'; 7" SS 26*, 29* and 32* at 14,018'	Dry		Wildcat. DT 244 days. 126 bits.
14,704	6-12-48 1- 4-48	Shell B-2 Smith-State	Company rig	Weeks Island, Iberia, La.		10 3/4" at 4490', 750 sx; 7 5/8" at 14,225', 750 sx	470B 574MCF 33°	°2400 GOR 1221	Perf. 58 at 14,015-18', 14,022- 26', 14,030-40'. Salt dome.
15,094	11-30-48 7-12-48	Shell A-1 J. A. Smith	Company tools	Weeks Island, Iberia, La.			431B 472 MCF 34°	°2575 GOR 1095	Deepest Louisiana production from 14,243-55'.
15,184 13,740	11-25-48 10- 7-46	Stanolind 1 Briseo Unit	Kerr-McGee	Southwest Bradley, Grady, Okla.	Arbuckle	9 5/8" 40*, 43.5* CSA 6960'; 7" 23* CSA 13,670'	Dry		Wildcat. DT 527 days. Anti- cline.
15,549	2- 2-48 6-26-47	Texas 6 State Atchafalaya Bay	Company rig	Belle Isle, St. Mary, La.	Sh. with Sd.	13 3/8" at 2495' 750 sx; 8 5/8" at 10,844' 1600 sx	Dry		Wildcat.
15,604	9-12-48 3-11-48	Texas 1 State Ise 646	Company rig	Queen Bess Island, Jefferson, La.	Shale	13 3/8" at 2024' 500 sx; 8 5/8" at 12,003' 1000 sx	Dry		Wildcat.
16,106	8-22-48 8-17-47	Texas 4 State Barataria	Company rig	Queen Bess Islavd, Jefferson, La.	Sd. & Sh.	13 3/8" at 3017' 500 sx; 8 5/8" at 12,027' 1000 sx; 5 1/2" at 16,106' 750 sx	Dry		Wildcat.
17,094		Denver Prod. & Ref. 1 School Ld. Bd.		Caddo, Okla.			Shut in		Second deepest hole in Okla- homa.
17,696	2-12-48 6- 6-47	Standard of Calif. 1 Maxwell	Rocky Mt. Drig. Co. Los Angeles, Calif.	W. Montalvo Ventura, Calif.	Repetto silt		Dry		DT 251 days. Deepest hole in California. Second deepest in world.

*Pressure is indicated by °flowing casing, †flowing tubing, §shut in casing, ^shut in tubing, °initial reservoir, *datum.

†Well listed, but not described in 1947 survey.

This record was held only a few weeks when in July, Pure No. 1 West Poison Spider discovered a new field near Casper, Wyoming, at 14,309 ft. It had good production, too, 898 bbl 43.6 gravity and 1,800,000 cu ft of gas on 3/4-in. choke.

As the end of the year came, Barnsdall No. 66-9 RSF picked up a new deep sand in the Newhall-Potrero field, California, reaching to 14,505 ft, according to company report, and producing 50 bbl a day of 28 gravity oil on gas lift.

The other two wells producing from below 14,000 ft are both in Louisiana. The Texas No. 111 Louisiana Land and Exploration at Leeville in July, 1948, discovered a new sand

at 14,082-94 ft good for 319 bbl 28 gravity flowing through 1/8-in. choke. Shell No. A-1, J. A. Smith had 431 bbl 34 gravity oil and 472,000 cu ft gas from 14,243-55 ft in Weeks Island. This is the same sand that has been producing so handsomely at the salt dome structure since 1945.

One of the interesting phases of this deep production is the low gravity in the Barnsdall and the Texas wells.

Of the 62 deep wells drilled this year that found oil, only one is producing above 8000 ft. This is the Texas 1-B Harrell with a total depth of 12,196 ft, a wildcat that discovered new gas and condensate production at 5035-5120 ft in Stephens County, Oklahoma.

The 61 other producing depths are divided thus:

- 6 in 8000- 9000-ft group
- 7 in 9000-10,000-ft group
- 5 in 10,000-11,000-ft group
- 14 in 11,000-12,000-ft group
- 19 in 12,000-13,000-ft group
- 5 in 13,000-14,000-ft group
- 5 in 14,000-15,000-ft group

Wildcats

Most of the wells drilled below 12,000 ft are wildcats, semi-wildcats, and field wildcats (meaning exploring deeper sands in old fields) and this condition will continue as the drill goes deeper. In 1948 about 65 per cent of all deep wells completed were in this category. These 97 tests

Table 4. Wells drilled below 12,000 ft in 1948 but not completed.

Present depth, ft	Condition	Company and name of well	Field and location
12,000	Testing	Magnolia 1 Britt-Chitwood Unit	Chitwood, Grady, Okla.
12,000	Testing	Magnolia 2 A. V. Spiers	Chitwood, Grady, Okla.
12,020	Testing	Western Nat. Gas 9 St. Charles Ranch	St. Charles, Aransas, Texas
12,030	Drilling	Texas 22 Falgout Holding Co.	Texas, Terrebonne, La.
12,040	Drilling	Barnsdall 1-A State	Chaves, N. Mex.
12,100	Drilling	Humble 1 Liverpool Gas Unit	Brazoria, Tex.
12,131	Testing	Marine Exploration 2 State	Seal Beach, Los Angeles, Calif.
12,213	Testing	Gravis & Mitchell 1 Opendweyer Aleus	St. Gabriel, Iberville, La.
12,263	Drilling	Magnolia Santa Fe Pacific "C"	Lea, N. Mex.
12,285	Testing	Gulf 1 La. State lse 1304	Jefferson, La.
12,432	Drilling	Humble B-4 J. M. Burguieres	Weeks Island, Iberia, La.
12,485	Drilling	Mid-Continent 1-B U. D. Sawyer	Lea, N. Mex.
12,527	Testing	Magnolia 1 F. Dodson	Chitwood, Grady, Okla.
12,527	Drilling	Ohio 3 Sledge	Knox, Grady, Okla.
12,699	Drilling	Texas 6 City of New Orleans	Leeville, Lafourche, La.
12,799	Drilling	Stanolind 1 Unit Big Sand Coulee	Park, Wyo.
12,922	Drilling	Standard of Calif. 4-2 SF&FL	Kettleman Hills S. Dome Kern, Calif.
12,950	Testing	British-American 1 Hartmann-Barnard Unit	Ventura Ave., Ventura, Calif.
13,033	Testing	Mountain Fuel Supply 5 Unit	Church Buttes, Sweetwater, Wyo.
13,087	Drilling	Magnolia 1-A TXL	Upton, Tex.
13,116	Drilling	Texas 1 Scharbauer	Midland, Texas
13,540	Testing	Standard of Calif. 12-21 KCL	Greeley, Kern, Calif.
13,655	Fishing	Societe Nationale des Petroles d'Aquitaine 1 Bastennes-Gaujac	South of Dax, France
13,885	Drilling	Superior 1 Harris, Tex.	Houston, Harris, Tex.
14,003	Testing	Richfield 21-33 CLA	N. Coles Levee, Kern, Calif.
14,039	Testing	George Vasen 1 Fee	Stone, Miss.
14,450	Drilling	Superior 4 LL&E State Unit 12	Four Isle, Terrebonne, La.
14,451	Drilling	Kerr-McGee et al Block 28	(in Gulf of Mexico), Terrebonne, La.
14,640	Drilling	Superior, Pacific Creek	Sublette, Wyo.
14,910	Drilling	Texas B-2 State lse 1248-Lake Pelto	Terrebonne, La.
15,003	Testing	Texas 1 State lse 919	Leeville, Lafourche, La.
15,033	Drilling	Superior 3 S. Tex. Dev. Co.	Lake Creek, Montgomery, Tex.
15,150	Drilling	Humble 2 J. R. Williams	Washington, Ala.
16,347	Testing	Humble 1 McWatters	Freestone, Tex.

brought in 17 brand new fields and 22 new sands or extensions, or a total of 39 strikes out of 97 tries, better than one in three.

This is a considerably higher percentage of discoveries than the average but the deep well is like several wells in the area it tests.

Many of these new fields were of first importance. Mid-Continent's Crossroads field, in Lea County, New Mexico, was the first production below 12,000 ft in the state. The location was made by seismograph and drilled to 12,258 ft. The Ellenburger was found at 12,115-255 ft and flowed an initial production of 3980 bbl 42.5 gravity oil a day through a 24/64-in. choke.

Pure's West Poison Spider field, Natrona County, Wyoming, mentioned before, is another great discovery.

Alberta, Canada, got one of the new-found fields. Canadian Gulf discov-

ered the Pincher Creek field at 11,755 ft with a well that went to 12,516 ft. The initial production was 385 bbl condensate and 9,800,000 cu ft gas; it is now shut in.

Fields Below 12,000 Ft

Fourteen new pools were opened up below 12,000 ft in 1948. Louisiana had 6 of these; California, Texas, and Wyoming each 2; New Mexico and Oklahoma each one.

This makes to date 32 fields deeper than any drill ever went before 1935, and more than a third of them were discovered in 1948.

Some of these are shut in awaiting further development or market outlets but most of the new ones are on production.

The new deep discoveries are shown on the map and described in detail in the tables. They include:

California. Barnsdall No. 66-9, RSF Newhall-Potrero field, mentioned

above, and Standard of California No. 73-30 V Bolsa Chica, Kettleman Hills, which was worked over and deepened before it was brought in for 530 bbl a day and 5,230,000 cu ft gas.

Louisiana. Superior discovered a new sand at Four Isle with its No. 1 LLE State Unit No. 19. Initial production was 294 bbl 38 gravity oil and 344,000 cu ft gas.

The Texas No. 12 State-Cote Blanche Island found a new gas field in St. Mary Parish below 13,300 ft, which is now shut in. The same company found two new sands in Leeville field, another one at Rabbit Island, and one at Bay St. Elaine.

New Mexico. The spectacular Crossroads* find has already been discussed.

Oklahoma. Gulf No. 1 Mainka discovered production below 13,000 ft in Grady County. Initial output was 470 bbl 46.5 gravity and 790,000 gas through 11/64-in. choke. The well was allowed to produce 2 months before plans were made to deepen it.

Texas. In the South Mayes field Humble discovered a new sand, which tested 134 bbl condensate and 1,334,000 cu ft gas. The well is shut in.

The Slick Urschel Benedum field properly belongs in 1948 completions also.

Wyoming. Pure's West Poison Spider find and the extension of the Church Butte field of Mountain Fuel Supply are two deep discoveries of importance. The Frontier sand at West Poison Spider, which is producing, is over a hundred feet thick. The Church Butte well produced some 29,600,000 cu ft of gas from the Dakota sand, which is 230 ft thick. This is shut in awaiting outlet.

Development Wells

Most intensive development of deep fields was at Ventura Avenue, California, and Week's Island, Louisiana.

Tide Water drilled 8 producers in the Ventura Avenue field, 3 of which were deepened to the new deep sand discovered in 1947. These had good initial production of some 1000 bbl 32 gravity oil on the average with about 1,000,000 cu ft gas.

Five new producers were drilled by Shell at Weeks Island. They average some 400 bbl 34 gravity oil a day initial output and about 400,000 cu ft gas.

Table 5 shows the consistent trend toward deeper drilling in the last five years. Only in the deepest zones is there wavering in the line.

Two new deep wells joined the Superior Weller test to make three more

*See "Drilling Problems in New Crossroads Field," by K. Marshall Fagin, *The Petroleum Engineer*, July, 1948, page 55, for details on this field.

Table 5. Wells by depth zones.

	12,000 to 13,000	13,000 to 14,000	14,000 to 15,000	15,000 to 16,000	16,000 to 17,000	17,000 to 18,000
1944	32	3	2	0	1	0
1945	50	10	5	3	1	0
1946	67	20	8	1	0	0
1947	71	23	13	5	2	1
1948	82	39	17	4	1	2
Totals	302	95	45	13	5	3

than 17,000 ft deep. Denver Producing and Refining has shut in its 17,094-ft test in Caddo County, Oklahoma, and Standard of California's Maxwell test was dry at 17,696 ft.

Superior Oil Company may be on the way to outdoing its own record at the Sublette, Wyoming, location where a new rig capable of drilling to 20,000 ft is being given its first trial and has already drilled the deepest hole in the state.

Drilling Time

Know-how has undoubtedly speeded up drilling time, which has reduced expense. Heavy drilling rigs that can handle the heavier and longer drill collar strings are another important factor in shortening drilling time. In 1947 average drilling time for 119 completed wells was 180 days. In 1948 it was 162 days average for 149 wells,

theoretically 18 days off each operation.

This reduction is made in spite of the fact that twice as many wells were drilling for more than a year in 1948 as there were in 1947. No operation in 1948 bettered the 24-day drilling time record made by Humble No. 1 P. H. McKnight, a wildcat that went to 14,629 ft in Wood County, Texas.

Union of California No. 1 R. W. Collins, Houma field, Louisiana, development well, went to 12,153 ft in 23 days for the 1948 record.

The Louisiana well that had 526 days drilling time, Gulf La Fourche Levee District Unit No. 18 stuck drill pipe at 11,871 ft and at 11,457 ft and had to side track above each time.

Another time consuming but valuable operation are the cores taken and drillstem tests.

The above Gulf well took 92 sidewall tests and 32 core bbl tests. Besides taking 19 cores Amerada No. 2 H. S. Record, Lea County, took 13 drillstem tests between 5485 ft and 13,508 ft. Over a hundred tests,—Schlumberger Sidewall, A-1 sidewall, Hughes, or wire lime—are not exceptional.

Bits

There is a discernible reduction in number of bits used in deep drilling. There is enough experience in this

type of operation now to get more use out of a bit and the bits themselves have been much improved. Stronger metals and better bearings give modern bits more authority.

In 1947 an average of 112 bits per well were needed in wells below 12,000 ft in the U. S. and Canada. This came down to an average of 96 in 1948 despite greater average depth of the wells.

This is also true of various localities. Average number of bits used per deep well in Louisiana was 71 in 1947 and 62 in 1948. One well used only 2 rock bits and 17 drag.

Texas shows a larger reduction with an average 106 bits per well compared to 130 in 1947.

A slight increase is found in California where 183 bits per well was average in 1947 and 199 in 1948. California, The Rocky Mountain district, and Canada drilling reveals its difficulties in the higher number of rock bits necessary to cut the dense formations.

Distribution

Louisiana continues to lead in number of wells drilled below 12,000 ft with 81 added this year to make 289 in the state.

California retained its place as second with 16 added to bring the total to 109. Last year, however, California drilled 24 below 12,000 ft.

Texas had 25 new deep wells to 20 last year and now has a total of 106.

Oklahoma now has 19 deep wells; Mississippi has 16; Florida 7; Wyoming, and Canada, 6 each; New Mexico, 5; Colorado, with none added in 1948, has 2.

Russia reports a second well below 12,000 ft in 1948 and Venezuela has 2 old ones. Canada, Russia, and New Guinea each had one deep well in 1948, the only ones outside the United States.

Operators

Each year a number of new operators are added to the list who are pioneering in the depths of the earth. According to the records 85 operators have drilled one or more wells below 12,000 ft. This represents a wide and varied management even for the substantial number of 610 wells drilled.

Eleven companies completed their first deep one this year.

This is the first time the name of the drilling contractor has been added to other information about deep wells. Here again we have a large number that have become familiar with deep drilling operations. More than 60 per cent of the 1948 wells were drilled by contractors; the other part by company divisions. * * *

TABLE 6. Deep wells (12,000 ft or below) by location.

State and County or Parish	Prior to 1948	1948	Total	State and County or Parish	Prior to 1948	1948	Total	State and County or Parish	Prior to 1948	1948	Total
Alabama	1	0	1	St. Martin	8	3		Goliad	1	0	
Clarke	1	0		St. Mary	20	7		Gonzales	1	0	
California	93	16	109	Terrebonne	32	12		Grayson	1	0	
Fresno	3	0		Vermilion	18	6		Hardin	2	0	
Imperial	1	0		Vernon	1	0		Harris	4	0	
Kern	61	3		Washington	1	0		Houston	0	1	
Kings	3	1		Webster	2	1		Jackson	1	0	
Los Angeles	8	2		Mississippi	11	5	16	Jefferson	1	2	
Orange	2	0		Adams	4	0		Kenedy	1	0	
Tulare	2	0		Forrest	2	0		Liberty	3	1	
Ventura	13	10		Green	1	0		Madison	1	0	
Colorado	2	0	2	Jasper	0	1		Martin	0	1	
Rio Blanco	2	0		Jeff Davis	1	0		Matagorda	4	2	
Florida	6	1	7	Jones	1	3		McMullen	1	1	
Charlotte	1	0		Lincoln	1	0		Midland	1	2	
Collier	1	1		Rankin	1	0		Montgomery	8	0	
Highlands	1	0		Stone	0	1		Newton	1	0	
Monroe	2	0		New Mexico	2	3	5	Nueces	1	3	
Palm Beach	1	0		Lea	1	3		Pecos	3	0	
Louisiana	208	81	289	Chaves	1	0		Reeves	1	0	
Acadia	4	0		Oklahoma	10	9	19	San Jacinto	0	1	
Allen	1	0		Beckham	1	0		Shelby	1	0	
Ascension	2	0		Caddo	1	3		Smith	2	0	
Assumption	4	2		Dewey	2	0		Starr	1	0	
Beauregard	4	0		Garvin	0	2		Trinity	1	0	
Bossier	1	0		Grady	3	3		Titus	1	0	
Calcasieu	3	2		McClain	1	0		Upton	1	4	
Cameron	7	6		Stephens	1	1		Willacy	3	1	
Claiborne	1	1		Washita	1	0		Winkler	2	1	
Evangeline	13	0		Texas	81	25	106	Wood	1	0	
Iberia	24	10		Anderson	2	0		Utah	1	0	1
Iberville	3	2		Andrews	2	0		Carbon	1	0	
Jackson	1	0		Brazos	12	2		Wyoming	4	2	6
Jeff Davis	6	0		Brooks	1	0		Freemont	1	0	
Jefferson	12	5		Cameron	1	1		Natrona	0	1	
Lafayette	2	2		Chambers	2	1		Sweetwater	1	1	
Lafourche	12	11		Colorado	1	0		Uinta	2	0	
Plaquemines	17	5		Crane and Upton	1	0		The Bahamas	1	0	1
Rapides	1	0		Duval	1	0		Canada	5	1	6
St. Bernard	2	1		Ector	2	0		Ecuador	1	0	1
St. Charles	4	3		Freestone	1	0		France	1	0	1
St. James	0	1		Gaines	3	0		Germany	1	0	1
St. John the Baptist	1	0		Galveston	2	1		New Guinea	0	1	1
St. Landry	1	2						Russia	1	1	2
								Venezuela	2	0	2
								Total	431	145	576

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