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Oil and Gas Development in Illinois in 1938

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The upswing in oil production and drilling activity in Illinois that began in 1937 gained momentum in 1938 and promises to bring a new and higher peak in the state's annual production in 1939. In 1938 the production totaled 23,929,000 bbl., as compared with 7,426,000 bbl. in 1937, more than a threefold increase. The number of producing oil wells in the new fields was 230 at the end of 1937 and it increased to 2157 at the end of 1938. Daily production for the whole state increased from approximately 35,000 bbl. at the end of 1937 to approximately 135,000 bbl. at the end of 1938, nearly a fourfold increase.

Of a total of 2539 wells completed in 1938 in Illinois, 1984 produced oil, 26 produced gas and 529 were dry holes. Of the total, 377 are classified as "wildcat" wells, defined as wells drilled outside of proved territory and more than one mile from the nearest production. The remainder, 2162 wells, were drilled in or near proved fields.

Of the 377 wildcat wells (Table 2) 32 were successful in discovering oil or gas in commercial quantities, either new fields or extensions of old fields.* Four of these discovery wells were gas wells, which are not yet commercially productive owing to lack of pipe-line facilities.

A special effort was made to ascertain the reasons for the locations of as many as possible of the wildcat wells and the results of this investigation are set forth in the following table:

Reason for Drilling	Total Number	Successful	Per Cent
Geology	30	9	30
Geophysics	14	4	29
Geology and geophysics	25	12	48
Total, scientific	69	25	36
Geologic information available, but not favorable	9	0	0
Not based on geologic or geophysical information	91	3	3
Unknown	208	4	2
	377	32	8.5

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Kemal Gishin

There is a striking contrast between the percentage of successes of the locations made with and without scientific aid; 36 per cent as against 3 per cent. Although this preponderance in favor of the scientifically made locations would probably be reduced somewhat if complete data were available, there is little doubt that the great majority of the 208 wildcat locations for which the data could not be obtained were made

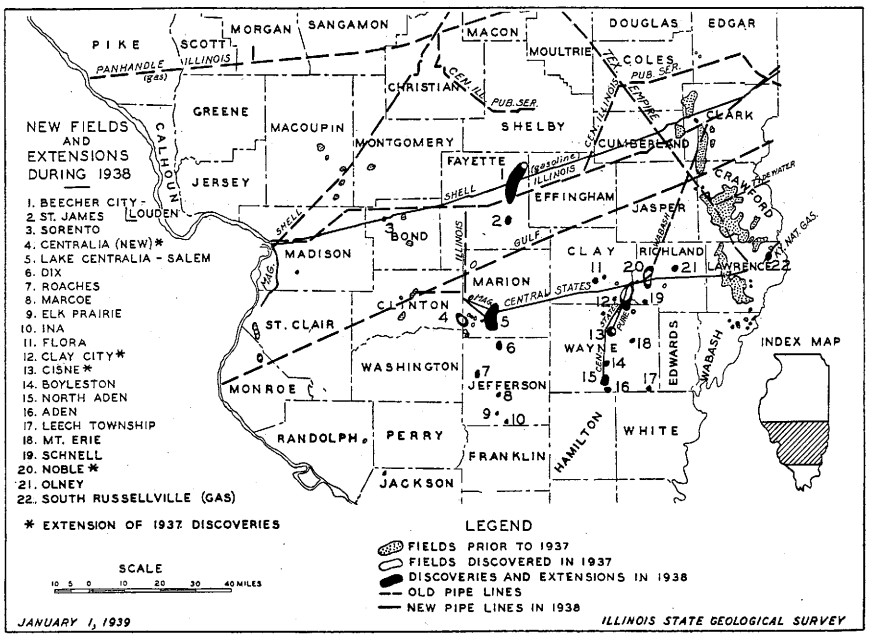

FIG. 1.—OIL AND GAS FIELDS IN ILLINOIS IN 1938.

without benefit of either geologic or geophysical recommendations, probably, in many cases, to fulfill contracts.

ECONOMIC DATA

Exact data on value at the wells of the crude oil produced in Illinois in 1938 are not at hand. Posted prices were as follows:

	PRICE PER BARREL
Old fields:	
January 1–September 27	$1.35
September 27–October 13	1.25
October 13–December 31	1.05
New fields:	
January 1–May 25	1.35
May 25–October 1	1.25
October 1–December 31	1.15

On the basis of posted prices, the total value of the 1938 production was approximately $29,300,000. Dividing this by the number of barrels of

oil produced, it is calculated that the average price per barrel for the year was $1.22. However, it is reported that considerable quantities of oil in some fields were sold below the posted price, therefore it may be assumed that the total returns from the oil were less than the total mentioned above.

No exact data are available as to drilling costs. A total of 4,766,047 ft. of hole was drilled in the state in 1938. If an average cost for all drilling in the state is assumed to be $3 per foot, it is calculated that there was a total investment in drilling of $14,298,141. This includes both producing wells and dry holes. There were, of course, large additional investments in leasing, equipping and operating wells, in storage tanks, pipe lines, warehouses, etc., for which even an approximation is not possible at this time.

The average depth of all wells drilled in the state in 1938 was 1870 ft. and the average initial daily production of the oil wells was 274 bbl. (For details see Tables 3 and 4.)

Pipe Lines and Refineries

Although the new oil reserves of Illinois enjoy the advantage of close proximity to a large market for refined products, the disposal to refineries of the rapidly increasing amounts of crude oil produced has presented some problems. These have been met in part by the construction of new pipe lines and substantial quantities of oil have been transported by rail and truck.

There has been a considerable amount of "pipe-line proration"; that is, curtailment of production by oil buyers, notably in the Centralia and Louden fields. There is no regulation of oil production in Illinois by any State authority.

The new Central States pipe line (Texas Company subsidiary) extends from the Salem field to the Indian Refinery at Lawrenceville (Fig. 1). It was put in operation on Nov. 14, 1938. It furnishes sufficient oil to run the refinery, and the surplus oil is transported north through the old Texas-Empire branch pipe line, which joins the main line at Heyworth (south of Bloomington, McLean County). From there the oil goes north to the Texas Company's refinery at Lockport, and other refineries in the Chicago district.

The Magnolia Petroleum Co. transports oil from the Salem pool to East St. Louis via Sandoval, Vandalia and Wood River.

Three small refineries were constructed at Centralia (capacity 2000 bbl. per day each) and one at St. Elmo (capacity 3500 bbl.).

The oils from the new Illinois fields range in gravity from 37° to 39° A.P.I., averaging approximately 38°. Sulphur content ranges from 0.12 to 0.18 per cent. These oils are similar to Mid-Continent crudes in their general characteristics (Table 1).

Exploration Methods

The principal methods used in guiding exploration and development are subsurface geology and geophysics, largely the reflection seismograph. Nearly 100 petroleum geologists are now making investigations of Illinois geology. Use is made of driller's logs, drilling-time logs, sample and core studies, electrical logs, and micropaleontology. Some of the oil companies are depending on electrical logs to make structural studies and correlations in fields because they are more quickly made than sample study logs. However, there appears to be no substitute for sample studies in attacking the regional problems of stratigraphy, sedimentation and structure.

The extent of reflection seismograph surveys for 1938 in Illinois is indicated by the following figures:

Date	Number of Seismograph Parties Active in Illinois
January 1, 1938	11
April 1, 1938	9
July 1, 1938	7
October 1, 1938	16
January 1, 1939	11

During the year approximately 196 townships (7056 square miles) were covered by seismograph surveys, mostly in the Illinois Basin.

Other geophysical methods, notably gravimeters and magnetometers, are being used to a relatively small extent and a few companies are engaged in structure test drilling.

The course of development during 1938 and the last eight months of 1937 is illustrated in the bar chart showing production by months (Fig. 2). Total lengths of the bars represent monthly production for the whole state. The bars are divided into old fields (stippled) and new fields (shaded): dark shading, limestone production, and light shading, sandstone production.

The limestone production is almost all from the "McClosky sand," which is a porous, oölitic zone in the Fredonia member of the Ste. Genevieve formation (Fig. 3). The McClosky production had its most rapid rise during the summer of 1937. The wells had large initial productions, but they also had rapid declines during the first few months. Average depth of the McClosky wells in the central part of the basin is approximately 3000 ft. (Table 1).

Development in 1938 consisted largely of the development of the comparatively shallow sandstone fields in the western part of the Illinois Basin where production is obtained from depths varying from 1300 to 1800 ft. The principal producing sands are the Cypress (called variously Carlyle, Stein, Weiler and Kirkwood) and the Benoist (Bethel formation) called Tracy in Lawrence County. The three most important fields in

this region are the Salem (Lake Centralia), the Louden (Beecher City), and the Centralia. Daily production of these wells at the end of 1938 was: Salem, 50,300 bbl., an average of 105 bbl. per well; Louden, 22,000 bbl., average 44 bbl. per well; Centralia (New), 7500 bbl., average 14 bbl.

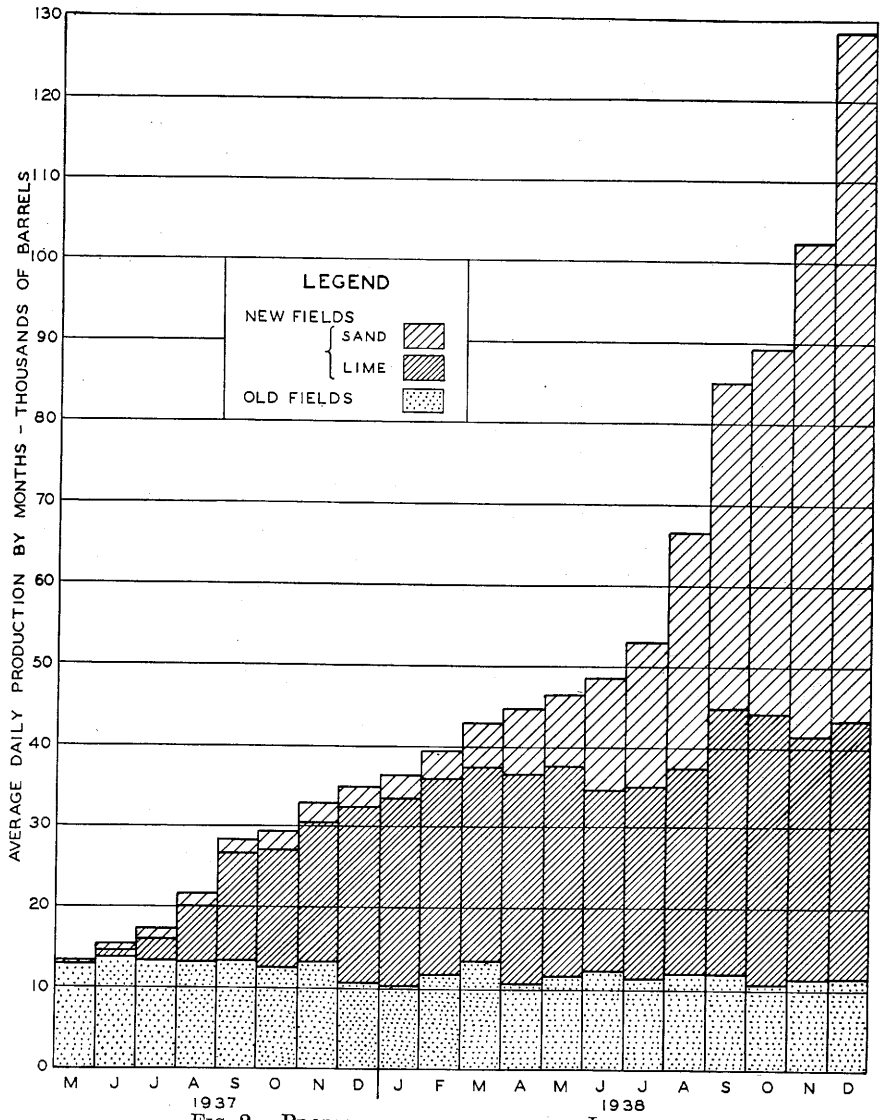

FIG. 2.—PRODUCTION OF CRUDE OIL IN ILLINOIS.

per well. Other details are given on lines 90, 84 and 94, respectively of Table 1. The Louden (Beecher City) and Centralia fields were discovered late in 1937, but had their major development in 1938. Centralia was outlined by early summer and was nearly completely drilled up by

the end of the year. Louden (Beecher City), on the other hand, was less than half developed at the end of 1938. Salem has had a remarkably rapid development; its discovery well was completed July 6, and it bids fair to outrank the best of the old fields—Lawrence County—in yield per acre.

Numerous new McClosky lime discoveries were made in the latter half of 1938. Of these, the North Aden pool in Wayne County appears to be the most important. For a detailed statement of wells and drilling operations in the new fields at the end of 1938 see Table 5. Data on discovery wells are given in Table 6.

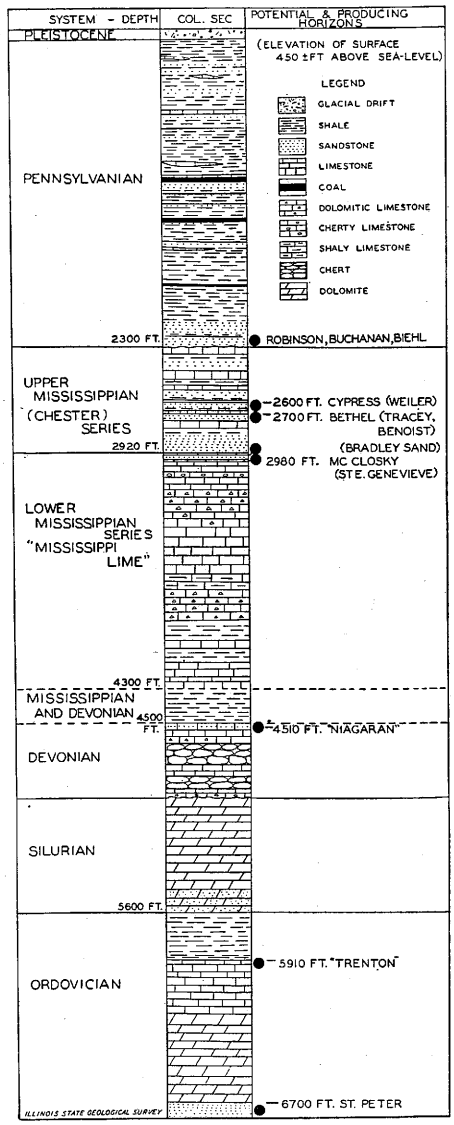

FIG. 3.—GENERALIZED GEOLOGIC COLUMN, ILLINOIS BASIN FIELDS IN CLAY, RICHLAND AND WAYNE COUNTIES.

DRILLING TO DEVONIAN AND DEEPER

Fifty-three wells reaching the Devonian limestone or deeper were completed in Illinois in 1938. Of these, two discovered oil in commercial quantities in the Devonian; one was a small gas well in the Pennsylvanian; one was the discovery well for Benoist production in the Dix pool, Jefferson County; five were Trenton lime producers in the Dupo field, St. Clair County; one was a small Hoing sand producer in the Colmar-Plymouth field, McDonough County; and the remainder were dry holes. Five of these wells reached the St. Peter sandstone, which is correlated with the Wilcox sand of Oklahoma. The St. Peter sandstone has not yet yielded any oil in Illinois.

Oil in commercial quantity was recently discovered in the Devonian limestone at a depth of 2920 ft. in the old Sandoval field, which has been producing for 30 years from the Benoist sand at an average depth of

1550 ft. This is especially significant because it suggests the possibility of extensive Devonian oil on favorable structures in the Illinois Basin. Some of these—for example, the Louden (Beecher City) and Salem (Lake Centralia) structures—are known to be much larger than the Sandoval structure.

TABLE 1.—*Oil and Gas Production in Illinois in* 1938

Line Number	Field, *County*	Age, Years to End of 1938	Area Proved, Acres		Total Oil Production, Bbl.		Total Gas Production, Millions Cu. Ft.		Number of Oil and/or Gas Wells				
										During 1938		At End of 1938	
			Oil	Gas[a]	To End of 1938	During 1938	To End of 1938	During 1938	Completed to End of 1938	Completed	Abandoned	Producing Oil[b]	Producing Gas[c]
1	Warrenton-Borton, *Edgar*	32	100	0	29,030±	630	0	0	22	0	0	13	0
2	Westfield (Parker Twp.), *Clark, Coles*	34	9,000	55	x	x	x	0	1,621	5	40	332	0
3			850	75	x	x	x	0	185	0	0	y	0
4			9,000	0	x	x	x	0	1,443	5	0	y	0
5			1,500	0	x	x	x	0	12	0	0	y	0
6	Siggins (Union Twp.), *Cumberland, Clark*	32	3,580	75	x	x	x	0	995	0	0	914	0
7			3,135	55	x	x	x	0	854	0	0	y	0
8			435	15	x	x	x	0	90	0	0	y	0
9			855	105	x	x	x	0	192	0	0	y	0
10	York, *Cumberland*		310	40	x	x	x	0	70	0	0	44	0
11	Casey, *Clark*	31	1,925	55	x	x	x	0	532	0	0	471	0
12			190	15	x	x	x	0	41	0	y	y	0
13			400	0	x	x	x	0	82	0	y	y	0
14			1,525	15	x	x	x	0	319	0	y	y	0
15	Martinsville, *Clark*	31	710	155	x	x	x	0	213	0	4	122	0
16			15	20	x	x	x	0	7	0	0	y	0
17			275	35	x	x	x	0	63	0	0	y	0
18			105	0	x	x	x	0	21	0	0	y	0
19			170	0	x	x	x	0	34	0	0	y	0
20			195	0	x	x	x	0	39	0	0	y	0
21			5	0	x	x	0	0	1	0	0	1	0
22	North Johnson, *Clark*	31	1,320	20	x	x	x	x	485	0	0	448	0
23			1,115	0	x	x	x	x	296	0	0	y	0
24			160	0	x	x	x	x	32	0	0	y	y
25			820	5	x	x	x	x	177	0	0	y	0
26			215	0	x	x	0	0	44	0	0	y	0
27	South Johnson, *Clark*	31	1,715	65	x	x	x	x	534	0	0	486	0
28			185	5	x	x	x	x	38	0	0	y	0
29			295	0	x	x	x	x	59	0	0	y	0
30			1,675	35	x	x	x	x	401	0	0	y	0
31			845	5	x	x	x	x	170	0	0	y	0
32	Bellair Crawford, *Jasper*	31	1,300	5	x	x	x	x	485	0	0	403	0
33			1,165	0	x	x	x	x	309	0	0	y	0
34			315	0	x	x	x	x	63	0	0	y	0
35			910	0	x	x	x	x	182	0	0	y	0
36	Clark County Division[1]		19,960	475	52,105,000±	193,000	x	y	4,982	5	44	3,234	0
37	Main,[2] *Crawford*	32	35,135	515	x	x	x	x	7,322	3	38	5,193	0
38			340	0	x	x	x	x	68	0	y	y	0
39			33,795	510	x	x	x	x	7,141	0	0	y	0
40			1,000	0	x	x	x	x	108	0	y	y	0

[a] Footnotes to column heads and explanation of symbols are given on page 27.
[1] Total of lines 1, 2, 6, 10, 11, 15, 22, 27, 32.
[2] Includes Kibbie, Oblong, Robinson and Hardinsville.

TABLE 1.—(*Continued*)

Line Number	Oil-production Methods at End of 1938: Number of Wells: Flowing	Pumping	Air, Gas, Water Lift	Pressure, Lb. per Sq. In.[d22]: Initial	Average at End of: 1937	1938	Character of Oil, Approx. Average during 1938: Gravity A.P.I. at 60° F.[23]: Weighted Average	Producing Formation: Name	Age[e]	Depth, Average in Feet: Bottoms of Productive Wells	To Top of Productive Zone	Character[f]	Porosity[g]	Net Thickness, Average in Feet	Structure[h]	Deepest Zone Tested to End of 1938: Name	Depth of Hole, Ft.
1	0	13		x	x	x	x	Unnamed	Pen	215	159	S	Por	x	ML	Pen	715
2	0	332		200±	x	x	34.0	See below							D	Trenton	2,918
3	0	y		x	x	x	30.0	Shallow gas sand	Pen	376	281	S	Por	36	D		
4	0	y		x	x	x	33.5	Westfield lime	MisL	446	334	L	Cav	x	D	St. Peter	3,009
5	0	y		x	x	x	37.0	Trenton (Ord)	Ord	2,568	2,265	L	Por	x	D		
6	0	914	24	x	x	x	33.0	See below							D	Dev. limestone	2,010
7	0	y		x	x	x	34.0	First Siggins sand	Pen	465	367	S	Por	x	D		
8	0	y		x	x	x	(33.6)	Second and third Siggins sand	Pen	562	478	S	Por	x	D		
9	0	y		x	x	x	(25.7)	Lower Siggins sand	Pen	590	556	S	Por	x	D		
10	0	44		x	x	x	(30.3)	York sand	Pen	680	588	S	Por	x	AM		960
11	0	471	25	x	x	x	29.2	See below							AM	MisL	808
12	0	y		x	x	x	(31.9)	Upper gas sand	Pen	358	263	S	Por	x	AM		
13	0	y		x	x	x	(30.1)	Lower gas sand	Pen	426	309	S	Por	x	AM		
14	0	y		x	x	x	(33.6)	Casey sand	Pen	505	444	S	Por	x	AM		
15	0	122		x	x	x	36.8	See below							D	St. Peter	3,411
16	0	y		x	x	x	y	Shallow sands	Pen	411	255	S	Por	x	D		
17	0	y		x	x	x	y	Casey sand	Pen	511	449	S	Por	x	D		
18	0	y		x	x	x	y	Martinsville	MisL	506	477	L	Por	x	D		
19	0	y		x	x	x	(38.9)	Carper	MisL	1,418	1,340	S	Por	x	D		
20	0	y		x	x	x	y	"Niagaran"	Dev	1,596	1,553	L	Por	x	D		
21	0	1		x	x	x	(39.6)	Trenton	Ord	2,830	2,708	L	Por	x	D		
22	0	448		x	x	x	31.0	See below							AM	Mis	965
23	0	y		x	x	x	y	Claypool sand	Pen	486	416	S	Por	x	AM		
24	0	y		x	x	x	y	Shallow sands	Pen	451	314	S	Por	x	AM		
25	0	y		x	x	x	y	Casey sand	Pen	508	465	S	Por	x	AM		
26	0	y		x	x	x	y	Upper Partlow	Pen	554	534	S	Por	x	AM		
27	0	486		x	x	x	32.2	See below							AM	Mis	1,160
28	0	y		x	x	x	y	Claypool sand	Pen	549	392	S	Por	x	AM		
29	0	y		x	x	x	y	Casey sand	Pen	518	453	S	Por	x	AM		
30	0	y		x	x	x	y	Upper Partlow	Pen	570	489	S	Por	x	AM		
31	0	y		x	x	x	28.5	Lower Partlow	Pen	618	598	S	Por	x	AM		
32	0	403		x	x	x	33.7	See below							AM	MisL	1,471
33	0	y		x	x	x	(32.4)	"500 Ft." sand	Pen	726	561	S	Por	x	AM		
34	0	y		x	x	x	y	"800 Ft." sand	Pen	907	817	S	Por	x	AM		
35	0	y		x	x	x	(37.0)	"900 Ft." sand	MisU	920	886	S	Por	x	AM		
36	0	3,234	26	x	x	x	33.0							33±			
37	0	5,193	27	425±	y	y	33.0	See below[32]								Trenton (Ord)	4,620
38	0	y		x	x	x	y	Shallow sand	Pen	822	508	S	Por	x	ML		
39	0	y	28	x	x	x	32.8	Robinson sand	Pen	960	900	S	Por	25±	ML	Trenton (Ord)	4,620
40	0	y		x	x	x	y	Oblong	Mis	1,416	1,337	S or L	Por	x	A, ML	Mis	1,479

[22] Pressures in the southeastern Illinois oil fields are estimated bottom-hole pressures reported in previous Survey publications.

[23] All gravities given prior to 1936 (except those in parentheses) were from data for the year 1925 furnished by the Illinois Pipe Line Co. Gravities in parentheses are for particular samples; see Illinois State Geol. Survey *Bull.* 54, Table 3. The values have been converted from Baumé to A.P.I. gravities.

[24] Air, 7.

[25] Gas, 1; air, 15.

[26] Gas, 1; air-gas, 5; air, 24.

[27] Gas, 16; air-gas, 20; air, 54.

[28] Gas, 16; air-gas, 20; air, 54; water, 1.

[32] The Salvage Oil and Gas Co.—W. S. McGrillis No. 3, sec. 25, T. 8 N., R. 13 W., is producing in the "McClosky sand" at a depth of from 1409 to 1415 ft.

TABLE 1.—(*Continued*)

Line Number	Field, *County*	Age, Years to End of 1938	Area Proved, Acres		Total Oil Production, Bbl.		Total Gas Production, Millions Cu. Ft.		Number of Oil and/or Gas Wells				
										During 1938		At End of 1938	
			Oil	Gas[a]	To End of 1938	During 1938	To End of 1938	During 1938	Completed to End of 1938	Completed	Abandoned	Producing Oil[b]	Producing Gas[a]
41	New Hebron, *Crawford*...	29	1,350	210	*x*	*x*	*x*	*x*	296	0	2	178	0
42	Chapman, *Crawford*.....	24	1,045	515	*x*	*x*	*x*	*x*	193	0	3	72	0
43	Parker, *Crawford*.....	31	1,310	30	*x*	*x*	*x*	*x*	256	0	1	216	0
44	Allison-Weger, *Crawford*.	*y*	1,075	20	*x*	*x*	*x*	*x*	146	0	0	65	0
45	Flat Rock,[3] *Crawford*....	*y*	1,375	545	*x*	*x*	*x*	*x*	289	3	7	149	0
46	Birds, *Crawford, Lawrence*	*y*	4,370	115	*x*	*x*	*x*	*x*	684	0	1	474	0
47	Crawford County Division[4].....		45,655	1,945	143,619,000	1,597,000	*x*	*y*	9,193	6	52	6,347	0
48	Lawrence, *Lawrence, Crawford*.....	32	24,150	1,550	*x*	*x*	*x*	*x*	4,399	11	27	3,200	0
49			5,015	35	*x*	*x*	*x*	*x*	1,231	0	*y*	*y*	0
50			2,240	0	*x*	*x*	*x*	*x*	475	0	*y*	*y*	0
51			345	1,095	*x*	*x*	*x*	*x*	243	0	*y*	*y*	0
52			15,960	220	*x*	*x*	*x*	*x*	3,017	0	*y*	*y*	0
53			4,020	200	*x*	*x*	*x*	*x*	684	0	*y*	*y*	0
54			6,950	0	*x*	*x*	*x*	*x*	957	0	*y*	*y*	0
55	St. Francisville, *Lawrence*.	*y*	420	0	*x*	*x*	*x*	*x*	54	0	*y*	45	0
56	Lawrence County Division[5].....		24,570	1,550	223,132,000	1,751,000	*x*	*y*	9,185	11	27	3,245	0
57	Allendale, *Wabash*.....	26	1,680	0	4,656,000	384,000	*x*	*y*	427	7	3	326	0
58	Total Southeastern Illinois field[6].....		91,855	3,970	423,541,030	3,925,630	*x*	*y*	19,064	29	126	13,152	0
59	Colmar-Plymouth, *Hancock, McDonough*.....	25	2,450	0	2,415,970	128,170	0	0	477	2	0	209	0
60	Pike County Gas, *Pike*..	33[7]	0	8,960	0	0	*x*	0	68	0	0	0	0
61	Jacksonville Gas, *Morgan*	28[8]	30	1,290	2,100	0	*x*	0	53	0	*y*	0	0
62	Carlinville, *Macoupin*....	29[9]	30	50	*x*	0	*x*	0	8	0	0	0	0
63	Spanish Needle Creek, *Macoupin*.....	23[10]	0	80	0	0	14.4	0	7	0	*y*	0	0
64	Gillespie-Wyen, *Macoupin*.....	23	40	0	*x*	0	0	0	22	0	0	0	0
65	Gillespie-Benld Gas, *Macoupin*.....	15[11]	0	80	0	0	135.8	0	4	0	0	0	0
66	Staunton Gas, *Macoupin*.	22[12]	0	400	0	0	1,050	0	18	0	0	0	0
67	Litchfield, *Montgomery*...	59[13]	100	0	22,000	0	*x*	0	17	0	0	0	0
68	Collinsville, *Madison*....	29[14]	40	0	715	0	0	0	5	0	0	0	0
69	Ayers Gas, *Bond*.....	16	0	325	0	0	167	23.2	19	1	0	0	10
70	Greenville Gas, *Bond*....	28[15]	0	160	0	0	990	0	4	0	0	0	0
71	Carlyle, *Clinton*.....	27	915	0	3,344,400	27,200	0	0	165	0	0	78	0
72	Frogtown, *Clinton*.....	20[16]	300	0	*x*	0	0	0	12	0	0	0	0
73	Sandoval, *Marion*.....	29	770	0	2,645,800	15,000	0	0	123	0	0	37	0
74	Centralia, *Marion*.....	28	175	0	*x*	*y*	0	0	22	0	0	3	0

[3] Includes Swearingen gas.
[4] Total of lines 37, 41, 42, 43, 44, 45, 46.
[5] Total of lines 48 and 55.
[6] Total of lines 36, 47, 56, 57.
[7] Abandoned 1930.
[8] Abandoned 1937.
[9] Abandoned 1925+.
[10] Abandoned 1934.
[11] Abandoned 1935.
[12] Abandoned 1919.
[13] Abandoned 1904.
[14] Abandoned 1921.
[15] Abandoned 1923.
[16] Abandoned 1933.

Natural Gas

Natural gas was produced commercially in two fields in Illinois during 1938, the Ayers field, Bond County (productive since 1922), and the Russellville field, Lawrence County.

Table 1.—(*Continued*)

Line Number	Oil-production Methods at End of 1938: Number of Wells: Flowing	Pumping	Air Gas, Water Lift	Pressure, Lb. per Sq. In.[d22]: Initial	Average at End of: 1937	1938	Character of Oil, Approx. Average during 1938: Gravity A.P.I. at 60° F.[23]: Weighted Average	Producing Formation: Name	Age[e]	Depth, Average in Feet: Bottoms of Productive Wells	To Top of Productive Zone	Character[f]	Porosity[g]	Net Thickness, Average in Feet	Structure[h]	Deepest Zone Tested to End of 1938: Name	Depth of Hole, Ft.
41	0	178		x	x	x	30.1	Robinson sand[33]	Pen	975	940	S	Por	x	ML	MisL	2,056
42	0	72		x	x	x	y	Robinson sand	Pen	1,015	995	S	Por	x	ML	Mis	2,279
43	0	216		x	x	x	y	Robinson sand	Pen	1,025	1,000	S	Por	x	ML	Pen?	1,127
44	0	65		x	x	x	29.5	Robinson sand	Pen	930	912	S	Por	x	ML	Pen	1,041
45	0	149		x	x	x	22.5	Robinson (Flat Rock)	Pen	945	935	S	Por	x	ML	Pen	1,032
46	0	474		x	x	x	31.8	Robinson sand	Pen	950	930	S	Por	x	ML	MisL	1,731
47	0	6,347	[29]	425±	x	x	32.3		Pen, Mis			S	Por		ML	Trenton (Ord)	4,620
48	0	3,200		650±	x	x	32.9	See below							A	St. Peter	5,190
49	0	y		x	x	x	y	Bridgeport sand	Pen	1,000	800	S	Por	40	A		
50	0	y		x	x	x	y	Buchanan	Pen	1,265	1,250	S	Por	15	A		
51	0	y		x	x	x	y	"Gas" sand	MisU	1,345	1,330	S	Por	15	A		
52	0	y		600±	x	x	y	Kirkwood	MisU	1,430	1,400	S	Por	30	A		
53	0	y		650	x	x	y	Tracey	MisU	1,580	1,560	S	Por	20	A		
54	0	y		x	x	x	y	McClosky	MisL	1,710	1,700	L	Por	10	A		
55	0	45		600	x	x	37.3	Kirkwood	MisU	1,865	1,843	S	Por	22	ML	Mis	1,900
56	0	3,245			x	x										St. Peter	5,190
57	0	326		x	x	x	35.1	Biehl sand	Pen	1,460	1,425	S	Por	20	AM		
58	0	13,152	[30]				33.1										
59	0	209		x	x	x	y	Hoing sand	Dev	468	447	S	Por	21	A	Trenton (Ord)	805
60	0	0		x	x	x		"Niagaran"	Sil	275	265	L	Por	10	A	St. Peter	893
61	0	0		x	x	x	x	Gas sand	Pen, Mis	335	330	S, SL	Por	5	ML	Trenton (Ord)	1,390
62	0	0		135	x	x	27.7	Unnamed	Pen	398	380	S	Por	x	A	Pen	410
63	0	0		y	y	y		Unnamed	Pen	405	305	S	Por	x	D	Pen	495
64	0	0		x	x	x	30.0	Unnamed	Pen	670	650	S	Por	x	T	Trenton (Ord)	2,560
65	0	0		155	x	x		Unnamed	Pen	555	542	S	Por	x	A	Pen	575
66	0	0		145	x	x		Unnamed	Pen	491	461	S	Por	x	A	Trenton (Ord)	2,371
67	0	0		x	x	x	21.7	Unnamed	Pen	674	664	S	Por	x	D	Pen	681
68	0	0		x	x	x	x	Devonian-Silurian	Dev-Sil	1,400	1,305	L	Por	20	ML	Silurian	1,500
69	0	0		335	310	310		Lindley (2d)	MisU	945	940	S	Por	5	A	MisL	1,150
70	0	0		x	x	x		Lindley (1st, 2d)	MisU	993	927	S	Por	x	A	Mis	1,065
71	0	78		x	x	x	35.2	Carlyle	MisU	1,055	1,035	S	Por	20	A	Sil	2,620
72	0	0		x	x	x	31.9	Carlyle	MisU	957	950	S	Por	7	0	Carlyle y	962±
73	0	37		x	x	x	34.5	Benoist	MisU	1,560	1,540	S	Por	20±	D	Mis	1,732
74	0	3		x	x	x	32.0	Dykstra, Wilson, Benoist	Pen, MisU	1,150	1,130	S	Por	20	D ML	MisL	1,779

[29] Gas, 17; air-gas, 24; air, 53; water, 1.
[30] Gas, 18; air-gas, 29; air, 79; water, 7.
[33] The West Union Oil and Gas Co.—Ducommon No. 1, sec. 28, T. 6 N., R. 12 W., is producing in the "McClosky sand," rom 1506 to 1528 ft.

TABLE 1.—(*Continued*)

Line Number	Field, *County*	Age, Years to End of 1938	Area Proved, Acres		Total Oil Production, Bbl.		Total Gas Production, Millions Cu. Ft.		Number of Oil and/or Gas Wells				
										During 1938		At End of 1938	
			Oil	Gas[a]	To End of 1938	During 1938	To End of 1938	During 1938	Completed to End of 1938	Completed	Abandoned	Producing Oil[b]	Producing Gas[c]
75	Wamac, *Clinton, Marion, Washington*	17	250	0	382,530	9,780	0	0	104	1	0	46	0
76	Dupo, *St. Clair*	10	670	0	946,870	36,100	0	0	242	5	0	30	0
77	Waterloo, *Monroe*	18[17]	125	0	166,000	0	0	0	23	0	0	0	0
78	Sparta Gas, *Randolph*	21[18]	65	100	*x*	0	*x*	0	20	0	0	0	0
79	Ava-Campbell Hill, *Jackson*	21[19]	70	370	25,000	0	*x*	0	35	0	0	0	0
80	Bartelso, *Clinton*	3	165	0	253,570	161,870	0	0	38	17	0	37	0
81	Decatur, *Macon*	2[20]	10	0	1,000	400	0	0	2	0	0	0	0
82	Total for fields prior to 1-1-37[21]		98,060	15,785	433,746,980	4,304,150	2,357.2	23.2	20,550	55	126	13,592	10
83	Sorento, *Bond*	1	10	0	*y*	*y*	0	0	1	1	0	0	0
84	Beecher City-Louden, *Fayette*	2	15,860	0	1,892,000	1,892,000	0	0	488	486	0	488	0
85			*y*	0	*y*	*y*	0	0	250	248	0	250	0
86			*y*	0	*y*	*y*	0	0	18	18	0	18	0
87			*y*	0	*y*	*y*	0	0	220	220	0	220	0
88	St. James, *Fayette*	1	270	0	48,000	48,000	0	0	24	24	0	24	0
89	Patoka, *Marion*	2	465	0	1,167,000	742,000	0	0	115	22	11	104	0
90	Lake Centralia-Salem, *Marion*	1	7,520	0	2,895,000	2,895,000	0	0	480	480	0	476	0
91			*y*	0	*y*	*y*	0	0	442	442	0	*y*	0
92			*y*	0	*y*	*y*	0	0	21	21	0	*y*	0
93			*y*	0	*y*	*y*	0	0	17	17	0	*y*	0
94	Centralia (New), *Clinton, Marion*	2	2,000	0	3,027,000	3,022,000	0	0	526	524	0	526	0
95			*y*	0	*y*	*y*	0	0	12	12	0	12	0
96			*y*	0	*y*	*y*	0	0	514	512	0	512	0
97	Dix, *Jefferson*	1	615	0	*y*	*y*	0	0	35	35	0	35	0
98	Roaches, *Jefferson*	1	20	0	*y*	*y*	0	0	2	2	0	2	0
99	Marcoe, *Jefferson*	1	10	0	*y*	*y*	0	0	1	1	0	1	0
100	Elk Prairie, *Jefferson*	1	10	0	*y*	*y*	0	0	1	1	0	1	0
101	Ina, *Jefferson*	1	10	0	*y*	*y*	0	0	1	1	0	1	0
102	Flora, *Clay*	1	140	0	68,000	68,000	0	0	9	9	0	9	0
103	Clay City, *Clay, Wayne*	2	4,750	0	5,560,000	4,004,000	0	0	222	144	0	222	0
104	Noble, *Richland*	2	3,150	0	5,179,000	4,232,000	0	0	153	108	8	141	0
105			*y*	0	*y*	*y*	0	0	6	6	0	6	0
106			3,150	0	*y*	*y*	0	0	145	102	8	135	
107	Schnell, *Richland*	1	40	0	*y*	*y*	0	0	4	4	0	4	0
108	Olney, *Richland*	2	380	0	415,000	414,000	0	0	30	29	0	28	0
109	Rinard, *Wayne*	2	10	0	*y*	*y*	0	0	1	0	0	1	0
110	Cisne, *Wayne*	2	575	0	*y*	*y*	0	0	26	23	0	25	0
111			20	0	*y*	*y*	0	0	2	0	0	2	0
112			555	0	*y*	*y*	0	0	24	22	0	23	0
113	Boyleston, *Wayne*	1	10	0	*y*	*y*	0	0	1	1	0	1	0
114	Aden, *Wayne*	1	160	0	*y*	*y*	0	0	4	4	0	4	0
115	North Aden, *Wayne*	1	690	0	305,000	305,000	0	0	40	40	0	40	0
116	Mt. Erie, *Wayne*	1	10	0	*y*	*y*	0	0	1	1	0	1	0
117	Leech Twp., *Wayne*	1	20	0	*y*	*y*	0	0	2	2	0	2	0
118	Russellville Gas, *Lawrence*	2	0	500	0	0	101.4	99.1	15	13	0	0	15
119	North		0	20	0	0	6.8	4.5	2	0	0	0	2
120	South		0	480	0	0	94.6	94.6	13	13	0	0	13
121	Total for fields after Jan. 1, 1937[36]		36,725	500	22,549,000	19,665,000	101.4	99.1	2,182	1,955	19	2,136	15
122	Total for Illinois[37]		134,785	16,285	456,850,000[34]	23,929,000[34]	2,458.6	122.3	22,732	2,010	145	15,728	25

[17] Abandoned 1930.
[18] Abandoned 1900.
[19] Abandoned 1934.
[20] Wells drilled in 1922 and 1924, first production in 1937.
[21] Total of lines 58 to 81 inclusive.
[34] Gas, 5.
[36] Total of lines 83 to 120 inclusive.
[37] Total of lines 82 and 121.

TABLE 1.—(*Continued*)

Line Number	Oil-production Methods at End of 1938: Number of Wells: Flowing	Pumping	Air, Gas, Water Lift	Pressure, Lb. per Sq. In.: Initial	Average at End of: 1937	1938	Character of Oil, Approx. Average during 1938: Gravity A.P.I. at 60° F.[23] Weighted Average	Producing Formation: Name	Age[e]	Depth, Average in Feet: Bottoms of Productive Wells	To Top of Productive Zone	Character[f]	Porosity[g]	Net Thickness, Average in Feet	Structure[h]	Deepest Zone Tested to End of 1938: Name	Depth of Hole, Ft.
75	0	46		*x*	*x*	*x*	30.2	Petro	Pen	760	720	S	Por	20	D	MisL	1,760
76	0	30		*x*	*x*	*x*	32.7	Trenton	Ord	651	601	L	Por, Cav	50	A	Trenton (Ord)	819
77	0	0		*x*	*x*	*x*	30.0	Trenton	Ord	460	410	L	Por	50	A	Trenton (Ord)	845
78	0	0		*x*	*x*	*x*	*x*	Sparta gas sand	MisU	857	850	S	Por	7	D	MisU	985
79	0	0		*x*	*x*	*x*	*x*	Unnamed	MisU	798	780	S	Por	18	A	Dev	2,530
80	0	37		*x*	*x*	*x*	32.0	Carlyle	MisU	1,008	984	S	Por	24	D	MisU	1,118
81	0	2		*x*	*x*	*x*	39.5	"Niagaran"	Dev	2,076	2,020	L	Por	30	N	St. Peter	2,991
82	0	13,592	[31]		0												
83	0	0		*y*	0	*y*	*y*	Devonian	Dev	1,830	1,800	L	Por	*y*	D	Devonian	1,830
84	135	353	[34]	*y*	*y*	*y*	37	See below							A	Devonian	3,170
85	*y*	*y*		*y*	*y*	*e*500	*y*	Cypress	MisU	1,541	1,510	S	Por	29			
86	*y*	*y*		*y*	0	*y*	*y*	Stray	MisU	1,561	1,542	S	Por	15			
87	*y*	*y*		*y*	0	*e*575	*y*	Bethel	MisU	1,566	1,542	S	Por	21			
88	0	24		*y*	*y*	*y*	37	Cypress	MisU	1,624	1,603	S	Por	19	A	MisU	1,636
89	0	104		*x*	*x*	*x*	39.5	Bethel	MisU	1,440	1,424	S	Por	16	A	MisL	1,675
90	127	349		*y*	*y*	*y*	39.5								A	MisL	2,192
91	*y*	*y*		*y*	*y*	*y*	*y*	Bethel	MisU	1,817	1,776	S	Por	38			
92	*y*	*y*		*y*	*y*	*y*	*y*	Aux Vases	MisU	1,850	1,801	S	Por	34			
93	*y*	*y*		*y*	*y*	*y*	*y*	McClosky	MisL	2,035	2,000	L	Por	19			
94	0	526		*y*	*y*	{ 10 { *e*250	36.1								A	MisL	1,646
95	0	12		*y*	*y*	*y*	*y*	Cypress	MisU	1,225	1,200	S	Por	19			
96	0	514		*y*	*y*	*y*	*y*	Bethel	MisU	1,378	1,355	S	Por	23			
97	0	35		*y*	*y*	*e*730	38	Bethel	MisU	1,965	1,950	S	Por	15	A	Devonian	3,874
98	0	2		*y*	*y*	*y*	*y*	Ste. Genevieve	MisL	2,271	2,192	S, L	Por	12	D?	MisL	2,263
99	0	1		*y*	*y*	*y*	*y*	McClosky	MisL	2,765	2,746	L	Por	11	D?	MisL	2,800
100	0	1		*y*	*y*	*y*	*y*	McClosky	MisL	2,751	2,718	L	Por	7	D?	MisL	2,958
101	0	1		*y*	*y*	*y*	*y*	St. Louis	MisL	3,007	3,002	L	Por	5	D	MisL	3,007
102	0	9		*y*	*y*	*y*	38.5	McClosky	MisL	2,982	2,966	L	Por	7	*y*	MisL	3,100
103	28	194		*y*	*y*	*y*	38.5	McClosky	MisL	3,035	2,984	L	Por	9	A	MisL	3,197
104	0	141		*y*	*y*	*y*	38.5								A	MisL	3,115
105	0	6		*y*	*y*	*y*	38.5	Cypress	MisU	2,602	2,569	S	Por	20			
106	0	135		*y*	*y*	*y*	38.5	McClosky	MisL	3,003	2,957	L	Por	10			
107	0	4		*y*	*y*	*y*	38.5	McClosky	MisL	3,068	3,012	L	Por	6	D	MisL	3,130
108	2	26		*y*	*y*	350	39.1	McClosky	MisL	3,073	3,052	L	Por	9	A	MisL	3,137
109	0	1		*y*	*y*	*y*	38.5	McClosky	MisL	3,154	3,144	L	Por	5	D	MisL	3,154
110	17	8		*y*	*y*	*y*	38.5								A	MisL	3,273
111	0	2		*y*	*y*	*y*	38.5	Aux Vases	MisU	3,026	2,982	S	Por	13			
112	17	6		*y*	*y*	*y*	38.5	McClosky	MisL	3,137	3,117	L	Por	10			
113	0	1		*y*	*y*	*y*	38.5	McClosky	MisL	3,269	3,253	L	Por	12	A?	MisL	3,269
114	0	4		*y*	*y*	*y*	38.5	McClosky	MisL	3,337	3,287	L	Por	7	A	MisL	3,460
115	34	6		*y*	*y*	400	38.5	McClosky	MisL	3,335	3,315	L	Por	13	A	MisL	3,440
116	0	1		*y*	*y*	*y*	38.5	McClosky	MisL	3,092	3,080	L	Por	*y*	D?	MisL	3,135
117	0	2		*y*	*y*	*y*	38.5	McClosky	MisL	3,461	3,446	L	Por	7	D?	MisL	3,438
118				*y*	*y*	380									A		
119				*y*	*y*	*y*		Pen sand	Pen	622	619	S	Por	12		MisL	2,012
120				*y*	*y*	*y*		Buchanan	Pen	1,100	1,090	S	Por	10		Pen	1,158
121	343	1,793	[34]														
122	343	15,385	[35]														

[31] Gas, 18; air-gas, 29; air, 171; water, 28.
[35] Gas, 23; air-gas, 29; air, 171; water, 28.

TABLE 2.—*Summary of Drilling Operations in Illinois*

Important Wildcats Drilled in 1938*

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
1	Bond.....	30	4 N	2 W	1,385	Ste. Genevieve	W. C. McBride, Inc.			Dry	
2	Bond.....	30	6 N	3 W	1,030	Ste. Genevieve	O. M. Nethery			Dry	
3	Bond.....	26	6 N	2 W	3,350	"Trenton"	A. T. Whitehead			Dry	
4	Bond.....	24	6 N	4 W	2,045	Devonian	Universal and DeMayo			Dry	
5	Bond.....	21	6 N	4 W	1,870	"Niagaran"	File et al.			Dry	
6	Bond.....	24	4 N	2 W	1,380	Bethel	Leavitt & Holland			Dry	
7	Bond.....	31	4 N	2 W	1,323	Ste. Genevieve	Lindsay Bros.			Dry	
8	Bond.....	28	4 N	4 W	1,337	St. Louis	John Farrelly			Dry	
9	Bond.....	33	4 N	4 W	1,130	St. Louis	Lindsey Bros. & Brit. Am.			Dry	
10	Bond.....	21	6 N	4 W	1,835	"Niagaran"	DeMayo et al.	15			Sorento
11	Brown.....	4	1 S	2 W	573	Mississippian	Fell Oil Trust			Dry	
12	Brown.....	15	1 S	2 W	642	"Niagaran"	Fell Oil Trust			Dry	
13	Bureau.....	8	17 N	6 E	1,347	St. Peter	Harrington Bros.			Dry	
14	Bureau.....	24	15 N	9 E	450	Pennsylvanian	John R. Lewis et al.			Dry	
15	Cass.....	30	17 N	12 W	585	"Niagaran"	Ed Duval			Dry	
16	Champaign...	9	17 N	10 E	350	Pennsylvanian	Casey-Edwards Oil Co.		1.5[1]		
17	Champaign...	33	18 N	10 E	480	L. Mississippian	Nedra Oil & Gas Co.			Dry	
18	Champaign...	20	20 N	8 E	610	Devonian	Barber & Siever			Dry	
19	Christian....	23	11 N	1 E	1,727	Ste. Genevieve	Independent Prod. & Ref.			Dry	
20	Christian....	23	11 N	1 E	1,801	St. Louis	Swords & McDougal			Dry	
21	Christian....	32	12 N	1 W	1,457	Ste. Genevieve	Brown & Lacy			Dry	
22	Christian....	29	12 N	2 W	1,010	L. Chester	Nokomis Oil Co.			Dry	
23	Clark.....	17	10 N	11 W	2,555	Devonian	Pierson & Yeager			Dry	
24	Clark.....	21	11 N	12 W	2,451	"Niagaran"	Nat'l Consumers Oil Co.			Dry	
25	Clark.....	30	12 N	13 W	403	Pennsylvanian	Stipes et al.		0.250[1]		
26	Clark.....	19	12 N	14 W	410	B. Pennsylvanian	W. R. Miller et al.			Dry	
27	Clark.....	29	12 N	13 W	525	L. Pennsylvanian	J. W. Stipes et al.			Dry	
28	Clark.....	17	11 N	12 W	2,440	"Niagaran"	Mid-American Resource Co.			Dry	
29	Clay.....	19	3 N	8 E	3,047	"McClosky"	Danville Oil Drillers, Inc.	124			Clay City extension
30	Clay.....	12	2 N	7 E	3,076	Ste. Genevieve	Wiser Oil Co.	273			Clay City extension
31	Clay.....	23	3 N	7 E	3,147	Ste. Genevieve	J. L. Tallman et al.			Dry	
32	Clay.....	19	3 N	8 E	3,098	Ste. Genevieve	Nu Crude Oil Co.			Dry	
33	Clay.....	13	3 N	6 E	2,983	Ste. Genevieve	Kingwood Oil Co.	550			Flora
34	Clay.....	24	4 N	8 E	3,150	Ste. Genevieve	Ohio Oil Co.			Dry	
35	Clay.....	14	4 N	5 E	4,325	"Niagaran"	Carter Oil Co.			Dry	
36	Clay.....	35	3 N	8 E	3,074	Ste. Genevieve	Eureka Oil Co.			Dry	
37	Clay.....	9	3 N	7 E	2,967	Ste. Genevieve	Ohio Oil Co.	459			Flora extension
38	Clay.....	32	3 N	5 E	3,030	Ste. Genevieve	Gordin & Robinson			Dry	
39	Clinton.....	18	3 N	2 W	1,188	Bethel	Hawley & Willis			Dry	
40	Clinton.....	4	3 N	2 W	1,406	L. Mississippian	Phelps et al.			Dry	
41	Clinton.....	13	1 N	1 W	1,370	Bethel	Adams Oil & Gas Co.	275			Centralia (New) extension
42	Clinton.....	13	1 N	1 W	1,444	Bethel	Paul Henshaw			Dry	
43	Clinton.....	22	1 N	4 W	1,030	L. Chester	Gross, Erling & Murphy			Dry	
44	Clinton.....	18	3 N	2 W	1,454	Ste. Genevieve	Hawley & Willis			Dry	
45	Clinton.....	21	1 N	1 W	1,420	Bethel	Brookside Oil Co.			Dry	
46	Clinton.....	4	2 N	1 W	1,733	Ste. Genevieve	Sigel & Schlosberg			Dry	
47	Clinton.....	28	2 N	1 W	1,750	L. Mississippian	Penn.-Ill. Oil Co.			Dry	
48	Clinton.....	3	2 N	5 W	1,352	Salem	Kennedy & Plangle			Dry	
49	Clinton.....	16	1 N	2 W	1,509	Ste. Genevieve	F. L. Heldt			Dry	

* One mile or more from production.

[1] Gas well for local use.

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
50	Clinton.....	35	2 N	2 W	1,370	Bethel	R. A. Wilson et al.			Dry	
51	Clinton.....	14	2 N	1 W	1,795	Ste. Genevieve	Trahan et al.			Dry	
52	Clinton.....	23	2 N	2 W	1,560	Ste. Genevieve	Hausman et al.			Dry	
53	Clinton.....	5	3 N	1 W	1,620	Ste. Genevieve	Taylor Drilling Co.			Dry	
54	Clinton.....	10	3 N	2 W	1,276	Bethel	M & K Oil Co.			Dry	
55	Clinton.....	30	1 N	4 W	1,403	L. Mississippian	Farrelly et al.			Dry	
56	Clinton.....	35	1 N	5 W	1,290	St. Louis	Martin et al.			Dry	
57	Clinton.....	19	3 N	2 W	1,183	Bethel	White et al.			Dry	
58	Clinton.....	22	3 N	2 W	1,150	Bethel	Sappington et al.			Dry	
59	Clinton.....	7	1 N	2 W	1,498	St. Louis	Phillips Petroleum Co.			Dry	
60	Clinton.....	24	1 N	3 W	1,360	Bethel	Watkins & Wright			Dry	
61	Clinton.....	21	2 N	3 W	1,355	Ste. Genevieve	A. C. Thomas et al.			Dry	
62	Clinton.....	35	2 N	3 W	1,370	Ste. Genevieve	Pass et al.			Dry	
63	Clinton.....	10	3 N	1 W	1,529	Bethel	G. N. Moore			Dry	
64	Clinton.....	28	3 N	2 W	1,389	Ste. Genevieve	Lou Huddleston et al.			Dry	
65	Coles.....	31	14 N	14 W	1,203	Silurian	Gregory & Mechling			Dry	
66	Coles.....	27	13 N	9 E	903	L. Mississippian	W. E. Hughes			Dry	
67	Coles.....	21	11 N	10 E	3,532	"Trenton"	Kingwood Oil Co.			Dry	
68	Coles.....	21	11 N	7 E	2,286	Ste. Genevieve	B. Wafford et al.			Dry	
69	Coles.....	9	12 N	7 E	2,277	St. Louis	Thompson Drilling Co.			Dry	
70	Coles.....	30	14 N	14 W	1,134	"Niagaran"	Mabee et al.			Dry	
71	Coles.....	27	13 N	8 E	2,105	Bethel	Ed Swearer & Crown Petr. Co.			Dry	
72	Coles.....	36	14 N	10 E	1,300	Devonian-Silurian	East Oakland Syndicate			Dry	
73	Crawford....	34	8 N	12 W	1,030	Basal Pennsylvanian	Darnell et al.			Dry	
74	Crawford....	18	5 N	10 W	955	Basal Pennsylvanian	Kentucky Natural Gas Co.			Dry	
75	Crawford....	24	6 N	12 W	1,027	Basal Pennsylvanian	Dill-Thalman et al.			Dry	
76	Crawford....	19	5 N	10 W	1,450	Ste. Genevieve	Kentucky Natural Gas Corp.			Dry	
77	Crawford....	6	6 N	11 W	1,621	Ste. Genevieve	Mahutska Oil Co.			Dry	
78	Crawford....	18	8 N	12 W	2,952	Devonian	Warren Hastings			Dry	
79	Cumberland..	30	10 N	9 E	2,330	L. Chester	Stipes et al.			Dry	
80	Cumberland..	26	9 N	9 E	2,825	Fredonia	Stewart Oil Co.			Dry	
81	Cumberland..	27	11 N	8 E	2,411	St. Louis	Phillips Petroleum Co.			Dry	
82	Cumberland..	18	10 N	7 E	2,301	Ste. Genevieve	Hanshaw Bros.			Dry	
83	Cumberland..	29	10 N	9 E	2,680	Ste. Genevieve	Jefferies & Cobb			Dry	
84	Edgar.....	22	13 N	12 W	2,314	"Niagaran"	Sun Oil Co.			Dry	
85	Edgar.....	18	12 N	13 W	1,000	L. Mississippian	J. W. Stipes et al.			Dry	
86	Edgar.....	15	14 N	11 W	2,160	"Niagaran"	J. M. Huber Corp.			Dry	
87	Edgar.....	16	14 N	13 W	670	L. Mississippian	Elmer Lapsley			Dry	
88	Edgar.....	24	14 N	14 W	544	L. Mississippian	Pearcy			Dry	
89	Effingham....	32	8 N	6 E	2,709	L. Mississippian	Hollis et al.			Dry	
90	Effingham....	18	6 N	7 E	2,900	St. Louis	Graham & Duncan			Dry	
91	Effingham....	15	6 N	6 E	5,823	Middle Ordovician	Kingwood Oil Co.			Dry	
92	Effingham....	24	8 N	4 E	2,700	L. Mississippian	Penn.-Ill. Oil & Gas Co.			Dry	
93	Effingham....	22	7 N	4 E	2,404	Ste. Genevieve	Kingwood & Baker			Dry	
94	Effingham....	20	9 N	4 E	2,012	Ste. Genevieve	Carter Oil Co.			Dry	
95	Effingham....	27	8 N	4 E	2,036	Basal Chester	W. D. Anderson			Dry	
96	Effingham....	31	9 N	4 E	1,656	Bethel	Carter Oil Co.			Dry	
97	Fayette.....	24	9 N	1 E	1,850	Ste. Genevieve	Ryan & Redgraves			Dry	

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
98	Fayette.....	16	8 N	3 E	1,573	Bethel	Farrelly et al.	35			Beecher City—Louden extension
99	Fayette.....	36	9 N	3 E	1,672	Bethel	Whisenant & Henshaw			Dry	
100	Fayette.....	27	8 N	2 E	1,574	Golconda	Crump, Ritchie & Payne			Dry	
101	Fayette.....	34	9 N	3 E	1,662	Bethel	W. F. Lacy			Dry	
102	Fayette.....	24	7 N	2 E	1,942	Ste. Genevieve	Sharp & Divers			Dry	
103	Fayette.....	2	7 N	2 E	1,665	L. Chester	Sol Simon et al.			Dry	
104	Fayette.....	24	8 N	2 E	1,500	L. Chester	Trares et al.			Dry	
105	Fayette.....	34	5 N	1 W	1,546	Bethel	Wheless & Whisenant			Dry	
106	Fayette.....	19	8 N	3 E	1,757	Bethel	W. C. McBride, Inc.			Dry	
107	Fayette.....	14	4 N	1 W	1,462	Bethel	Wheeler & Whisenant			Dry	
108	Fayette.....	16	5 N	2 E	1,919	Bethel	Finley & Greer			Dry	
109	Fayette.....	10	6 N	3 E	1,912	Bethel	Joe Sharp & J. Divers			Dry	
110	Fayette.....	1	7 N	2 E	1,760	Bethel	Pat Hudson			Dry	
111	Fayette.....	6	8 N	3 E	1,772	Bethel	Iroquois Oil & Gas Co.			Dry	
112	Fayette.....	20	6 N	3 E	1,810	Bethel	Whisenant et al.			Dry	
113	Fayette.....	30	6 N	3 E	1,622	Cypress	Rosenthal	188			St. James
114	Fayette.....	12	7 N	2 E	1,800	Bethel	Ruwaldt & Johnson			Dry	
115	Fayette.....	3	8 N	1 E	1,822	St. Louis	Phillips Petroleum Corp.			Dry	
116	Fayette.....	4	8 N	3 E	1,690	Cypress	Bell Oil & Gas Co.			Dry	
117	Fayette.....	35	8 N	3 E	1,637	Bethel	DeKalb Syndicate			Dry	
118	Fayette.....	8	5 N	1 E	1,602	Bethel	Burroughs			Dry	
119	Fayette.....	1	5 N	2 E	1,802	Bethel	Longovia et al.			Dry	
120	Fayette.....	25	6 N	2 E	1,820	Bethel	W. B. Johnson			Dry	
121	Fayette.....	5	6 N	3 E	1,753	Aux Vases	Jarvis Bros.			Dry	
122	Fayette.....	12	6 N	3 E	2,201	"McClosky"	J. C. Cole et al.			Dry	
123	Fayette.....	19	6 N	3 E	1,980	"McClosky"	F. H. Brown et al.			Dry	
124	Fayette.....	16	7 N	3 E	1,593	Bethel	Cummings et al.			Dry	
125	Fayette.....	34	9 N	2 E	1,850	Basal Chester	Bob Garland			Dry	
126	Fayette.....	2	6 N	2 E	1,952	Bethel	Zephyr Drilling Co.			Dry	
127	Fayette.....	35	6 N	1 W	1,434	Bethel	Putman et al.			Dry	
128	Fayette.....	32	6 N	3 E	1,852	Bethel	Mammoth Prod. & Ref.			Dry	
129	Fayette.....	30	5 N	1 E	1,580	Bethel	W. C. Stephenson et al.			Dry	
130	Fayette.....	30	7 N	3 E	1,647	Bethel	Whisenant et al.			Dry	
131	Fayette.....	33	7 N	3 E	1,910	Ste. Genevieve	Jarvis Bros.			Dry	
132	Fayette.....	29	8 N	1 E	1,695	Ste. Genevieve	Producers Oil Co.			Dry	
133	Fayette.....	33	8 N	1 E	1,640	Basal Chester	Doran & Haynes			Dry	
134	Fayette.....	30	9 N	1 E	1,775	Ste. Genevieve	Continental Oil Co			Dry	
135	Fayette.....	36	4 N	1 W	1,702	Ste. Genevieve	Lindsey et al.			Dry	
136	Fayette.....	16	5 N	1 E	1,656	Bethel	American Seismograph Co.			Dry	
137	Fayette.....	8	6 N	3 E	2,001	Ste. Genevieve	Mylius et al.			Dry	
138	Fayette.....	15	6 N	1 W	1,755	L. Mississippian	Hurricane Creek Oil Co.			Dry	
139	Fayette.....	35	6 N	1 W	1,434	Bethel	Putman et al.			Dry	
140	Fayette.....	18	7 N	2 E	1,970	Ste. Genevieve	Papoose Oil Co.			Dry	
141	Fayette.....	31	9 N	3 E	2,200	L. Mississippian	Ulfrich & Pough			Dry	
142	Fulton.....	11	7 N	1 E	657	"Niagaran"	Ketcherside & Fisher			Dry	
143	Franklin.....	6	5 S	4 E	3,050	L. Mississippian	Washburn Petroleum Co.			Dry	
144	Franklin.....	18	5 S	3 E	2,946	St. Louis	Markham, Mason & Redwine			Dry	
145	Franklin.....	14	7 S	1 E	3,308	Ste. Genevieve	Amerada Petroleum Co.			Dry	

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
146	Franklin.....	19	5 S	2 E	3,102	St. Louis	Adams Oil & Gas Co.			Dry	
147	Franklin.....	4	5 S	1 E	3,103	Salem	Buell			Dry	
148	Franklin.....	36	6 S	2 E	3,197	St. Louis	Eason Oil Co.			Dry	
149	Hamilton....	32	3 S	7 E	3,460	Ste. Genevieve	H. H. Weinert, Inc.			Dry	
150	Hancock.....	1	3 N	5 W	568	Hoing	Callihan et al.			Dry	
151	Hancock.....	11	4 N	5 W	531	Hoing	Forrest Groves			Dry	
152	Hardin.....	30	11 S	8 E	2,345	"Trenton"	Maretta Oil Co.			Dry	
153	Iroquois.....	14	26 N	12 W	1,096	Maquoketa	Whittet et al.			Dry	
154	Jackson.....	20	7 S	4 W	4,144	St. Peter	Stanolind Oil & Gas Co.			Dry	
155	Jackson.....	12	7 S	2 W	1,891	"McClosky"	T. T. Eason			Dry	
156	Jackson.....	11	7 S	2 W	2,007	Ste. Genevieve	W. R. Hayes			Dry	
157	Jasper.....	33	6 N	14 W	3,018	Ste. Genevieve	Denver Prod. & Ref. Co.			Dry	
158	Jasper.....	20	8 N	10 E	4,139	Devonian	Hoffman et al.			Dry	
159	Jasper.....	7	6 N	9 E	2,540	Chester	Richard Eke			Dry	
160	Jasper.....	3	6 N	9 E	2,708	Lower Chester	Obermayer et al.			Dry	
161	Jasper.....	33	7 N	9 E	3,210	St. Louis	Continental Oil Co.			Dry	
162	Jasper.....	30	8 N	10 E	2,694	Ste. Genevieve	Borah et al.			Dry	
163	Jefferson.....	10	1 S	2 E	2,000	Bethel	Carter Oil Co.	73			Dix[2]
164	Jefferson.....	23	4 S	3 E	3,150	Ste. Genevieve	Benedum-Trees Oil Co.			Dry	
165	Jefferson.....	15	1 S	1 E	1,959	Bethel	Dee & Jordan			Dry	
166	Jefferson.....	6	2 S	2 E	2,467	L. Mississippian	Sturbois & Tomberlin			Dry	
167	Jefferson.....	16	2 S	1 E	2,380	St. Louis	Dee et al.			Dry	
168	Jefferson.....	7	1 S	3 E	2,200	Lower Chester	Hausman et al.			Dry	
169	Jefferson.....	6	1 S	1 E	1,840	Cypress	Crosby & Gill			Dry	
170	Jefferson.....	6	1 S	1 E	2,132	Ste. Genevieve	J. O. Gill			Dry	
171	Jefferson.....	4	2 S	2 E	2,552	Ste. Genevieve	Kingwood Oil Co.			Dry	
172	Jefferson.....	5	1 S	2 E	2,010	Cypress	Case, Hanna et al.			Dry	
173	Jefferson.....	20	4 S	3 E	2,911	Fredonia	Dee & Foltz			Dry	
174	Jefferson.....	20	4 S	3 E	2,653	Chester	Dee & Foltz			Dry	
175	Jefferson.....	25	4 S	2 E	3,003	St. Louis	Nollem Oil & Gas Co.	12			Ina
176	Jefferson.....	1	1 S	1 E	1,840	Bethel	Sam Jennings et al.			Dry	
177	Jefferson.....	6	1 S	1 E	1,163	Pennsylvanian	V. O. Lewis			Dry	
178	Jefferson.....	2	2 S	1 E	2,413	St. Louis	J. G. Buell			Dry	
179	Jefferson.....	5	3 S	4 E	3,167	"McClosky"	J. G. Buell			Dry	
180	Jefferson.....	22	2 S	1 E	2,263	"McClosky"	Magnolia Petroleum Co.	217			Roaches
181	Jefferson.....	16	2 S	1 E	2,958	"McClosky"	Benedum-Trees Oil Co.	20			Elk Prairie
182	Jefferson.....	28	1 S	2 E	2,238	Ste. Genevieve	Milam et al.			Dry	
183	Jefferson.....	36	1 S	2 E	2,579	St. Louis	A. S. Walker			Dry	
184	Jefferson.....	18	1 S	4 E	2,808	Ste. Genevieve	Minerva Oil Co.			Dry	
185	Jefferson.....	9	2 S	1 E	2,272	Ste. Genevieve	Transwestern Oil Co.			Dry	
186	Jefferson.....	14	2 S	1 E	2,401	Ste. Genevieve	Luttrell & Holleman			Dry	
187	Jefferson.....	27	2 S	1 E	2,868	Salem	Magnolia Petroleum Co.			Dry	
188	Jefferson.....	28	2 S	1 E	2,264	Ste. Genevieve	Dr. Moore et al.			Dry	
189	Jefferson.....	12	3 S	2 E	2,822	Ste. Genevieve	W. O. Allen et al.			Dry	
190	Jefferson.....	22	3 S	2 E	2,765	"McClosky"	Magnolia Petroleum Co.	237			Marcoe
191	Jefferson.....	20	4 S	3 E	3,150	St. Louis	Parker-Price			Dry	
192	Lawrence....	20	4 N	11 W	1,215	Bridgeport	Payne et al.			Dry	
193	Lawrence....	13	4 N	11 W	1,061	B. Pennsylvanian	Joe Kesl et al.		2.651		South Russellville
194	Lawrence....	22	3 N	11 W	2,044	St. Louis	Chester Harris et al.			Dry	
195	Lawrence....	14	3 N	11 W	2,000	L. Mississippian	Trio Oil Co.			Dry	
196	Lawrence....	23	4 N	11 W	1,750	L. Mississippian	Joe Kesl et al.			Dry	

[2]Well drilled to Devonian but plugged back to Bethel sandstone.

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
197	McDonough..	2	5 N	4 W	820	"Trenton"	Ed Jones et al.			Dry	
198	McDonough..	6	4 N	4 W	483	Hoing	W. I. Cole			Dry	
199	McDonough..	6	4 N	4 W	510	Hoing	W. I. Cole			Dry	
200	McDonough..	15	7 N	3 W	815	"Trenton"	John Mehmken			Dry	
201	McDonough..	6	4 N	4 W	511	Hoing	W. I. Cole et al.			Dry	
202	Macon.....	30	17 N	2 E	2,992	St. Peter	Sun Oil Co.			Dry	
203	Macon.....	3	15 N	2 E	1,085	Chester	Werner Bros.			Dry	
204	Macoupin....	15	8 N	8 W	425	Pennsylvanian	American Petroleum Corp.		0.62[3]		
205	Macoupin....	8	9 N	7 W	448	B. Pennsylvanian	Cross et al.			Dry	
206	Macoupin....	21	9 N	8 W	500	L. Mississippian	Erie Drilling Co.			Dry	
207	Macoupin....	33	9 N	6 W	617	B. Pennsylvanian	Erie Drilling Co.			Dry	
208	Macoupin....	24	8 N	9 W	1,755	"Trenton"	Spence Bros. et al.			Dry	
209	Macoupin....	23	9 N	8 W	420	Pennsylvanian	E. McCallum et al.			Dry	
210	Macoupin....	15	11 N	8 W	1,828	Trenton	Phillips Petroleum Co.			Dry	
211	Madison.....	12	4 N	9 W	2,093	St. Peter	Penn-Illinois Oil Co.			Dry	
212	Madison.....	15	6 N	8 W	1,980	"Trenton"	Marshall Spivey			Dry	
213	Madison.....	9	4 N	8 W	1,080	L. Mississippian	C & A Development Co.			Dry	
214	Madison.....	18	4 N	8 W	400	Mississippian	Penn-Ill. Development Co.			Dry	
215	Marion.....	35	3 N	4 E	2,765	L. Mississippian	Helmrich and Payne			Dry	
216	Marion.....	12	4 N	1 E	1,962	Ste. Genevieve	Schriver et al.			Dry	
217	Marion.....	5	3 N	1 E	1,494	B. Chester	Alexander et al.			Dry	
218	Marion.....	29	2 N	1 E	2,001	St. Louis	W. C. McBride, Inc.			Dry	
219	Marion.....	12	4 N	4 E	2,881	St. Louis	Albachtin and Sims			Dry	
220	Marion.....	33	2 N	1 E	2,007	L. Mississippian	W. D. Sheddon et al.			Dry	
221	Marion.....	36	4 N	1 E	1,050	B. Pennsylvanian	Hackman and Harris			Dry	
222	Marion.....	1	3 N	1 E	1,759	Bethel	Vaughn et al.			Dry	
223	Marion.....	7	3 N	1 E	1,514	L. Chester	Adams			Dry	
224	Marion.....	27	1 N	1 E	1,950	Bethel	Samuel and Dyke			Dry	
225	Marion.....	5	1 N	2 E	1,916	"McClosky"	Texas Company	732			Lake Centralia-Salem field
226	Marion.....	5	3 N	2 E	2,000	Bethel	Max Conrey et al.			Dry	
227	Marion.....	24	1 N	1 E	2,200	Ste. Genevieve	A. P. Potter et al.			Dry	
228	Marion.....	19	2 N	1 E	2,100	L. Mississippian	Morrison			Dry	
229	Marion.....	22	4 N	2 E	2,265	Ste. Genevieve	Penn-Illinois Oil and Gas			Dry	
230	Marion.....	18	3 N	3 E	2,230	Bethel	Marion Oil Co.			Dry	
231	Marion.....	2	1 N	1 E	2,194	Ste. Genevieve	Harris and Broddus			Dry	
232	Marion.....	7	1 N	1 E	1,820	L. Mississippian	J. O. Gill			Dry	
233	Marion.....	9	1 N	1 E	1,930	Ste. Genevieve	Parshall-Graham			Dry	
234	Marion.....	1	1 N	1 E	1,728	Golconda	Iroquois Oil & Gas Co.			Dry	
235	Marion.....	5	1 N	1 E	1,823	Bethel	Ann Bell Oil Co.			Dry	
236	Marion.....	8	1 N	1 E	2,045	Ste. Genevieve	Thompson Drilling Co.			Dry	
237	Marion.....	25	2 N	1 E	2,018	Bethel	Carpenter & Goldberg			Dry	
238	Marion.....	36	2 N	1 E	1,920	Bethel	Boyce & Welch			Dry	
239	Marion.....	18	2 N	4 E	2,801	Ste. Genevieve	Bonnie Oil & Gas Co.			Dry	
240	Marion.....	2	1 N	1 E	900	Pennsylvanian	Blalack & Gray			Dry	
241	Marion.....	3	1 N	1 E	1,632	Cypress	Ann Bell Oil Co.			Dry	
242	Marion.....	5	1 N	1 E	837	Pennsylvanian	Cole & Simmel			Dry	

[3] Gas well for local use.

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U.S. Bbl.	Gas, Millions Cu. Ft.		
243	Marion.....	12	1 N	1 E	2,026	Paint Creek	J. L. Gardenhire			Dry	
244	Marion.....	10	1 N	3 E	2,133	Chester	Cattani et al.			Dry	
245	Marion.....	19	1 N	3 E	2,303	L. Chester	R. E. Dalton Oil Co.			Dry	
246	Marion.....	10	2 N	1 E	1,710	L. Chester	Boyce et al.			Dry	
247	Marion.....	11	3 N	2 E	2,331	"McClosky"	Baldwin & Streetor			Dry	
248	Marion.....	23	3 N	2 E	2,453	Ste. Genevieve	Max Pray			Dry	
249	Marion.....	20	4 N	2 E	1,652	L. Chester	Newman et al.			Dry	
250	Marion.....	22	4 N	2 E	1,550	L. Chester	Wigoso Oil & Gas Co.			Dry	
251	Marion.....	12	1 N	1 E	2,315	Bethel	Blair et al.			Dry	
252	Marion.....	30	1 N	2 E	1,835	Golconda	Tom Boyce			Dry	
253	Marion.....	15	1 N	4 E	2,680	B. Chester	Dalton Oil Development Co.			Dry	
254	Marion.....	1	2 N	1 E	2,131	Ste. Genevieve	Richland Corp.			Dry	
255	Marion.....	5	2 N	2 E	2,195	Ste. Genevieve	Mid Valley Steel Co.			Dry	
256	Marion.....	5	2 N	2 E	2,192	"McClosky"	W. S. Tatum			Dry	
257	Marion.....	6	2 N	4 E	2,850	Ste. Genevieve	Garnier Bros.			Dry	
258	Marion.....	24	3 N	3 E	2,560	St. Louis	Devonian Oil Co.			Dry	
259	Marion.....	24	4 N	2 E	2,005	Bethel	Transwestern Oil Co.			Dry	
260	Marion.....	26	4 N	2 E	2,211	"McClosky"	Conrey et al.			Dry	
261	Marion.....	1	1 N	1 E	2,202	Ste. Genevieve	J. J. Broadus			Dry	
262	Marion.....	16	1 N	1 E	1,910	Bethel	Dr. Phillips & Ashby			Dry	
263	Marion.....	8	2 N	2 E	2,261	Ste. Genevieve	Ed Hollmans et al.			Dry	
264	Marion.....	20	2 N	3 E	2,501	Ste. Genevieve	Pyramid Petroleum Corp.			Dry	
265	Marion.....	16	3 N	2 E	2,351	Ste. Genevieve	Bob Garland			Dry	
266	Menard.....	24	19 N	5 W	1,570	"Niagaran"	Scroggins et al.			Dry	
267	Monroe.....	10	3 S	11 W	780	St. Peter	Fernwald et al.			Dry	
268	Montgomery.	29	8 N	5 W	849	St. Louis	Bill Casseday			Dry	
269	Montgomery.	4	8 N	5 W	821	L. Mississippian	Baker et al.			Dry	
270	Montgomery.	29	8 N	5 W	905	Pennsylvanian	Meyers et al.		0.08[4]		
271	Montgomery.	3	8 N	5 W	758	B. Pennsylvanian	Baker & Martin			Dry	
272	Montgomery.	4	9 N	4 W	1,250	Ste. Genevieve	Joe Kesl			Dry	
273	Montgomery.	10	10 N	1 W	1,610	Bethel	Swords et al.			Dry	
274	Montgomery.	32	8 N	5 W	700	B. Pennsylvanian	Meyers & Graham			Dry	
275	Morgan.....	8	15 N	9 W	440	Warsaw	Judd & Sons			Dry	
276	Morgan.....	33	14 N	8 W	1,685	Trenton	Waverly Oil Syndicate, Ltd.			Dry	
277	Morgan.....	25	15 N	9 W	1,590	Trenton	Alexander Oil Co.			Dry	
278	Morgan.....	25	15 N	9 W	450	L. Mississippian	Alexander Oil Co.			Dry	
279	Moultrie.....	18	13 N	6 E	2,005	St. Louis	Ralph Neely et al.			Dry	
280	Moultrie.....	22	15 N	6 E	1,866	Bethel	Continental Oil Co.			Dry	
281	Perry.....	10	6 S	3 W	1,643	Ste. Genevieve	Amerada Petrol. Co.			Dry	
282	Perry.....	22	6 S	2 W	1,769	Ste. Genevieve	Amerada Petrol. Co.			Dry	
283	Perry.....	17	6 S	1 W	1,832	St. Louis	Eason Oil Co.			Dry	
284	Perry.....	6	5 S	1 W	1,605	Ste. Genevieve	L. C. Simmel			Dry	
285	Perry.....	27	5 S	1 W	2,636	Ste. Genevieve	Bert Fields & Rockhill Co.			Dry	
286	Piatt.....	17	18 N	6 E	3,021	"Trenton"	Max Pray et al.			Dry	
287	Pope.....	12	11 S	5 E	1,760	Chester	C. C. Whitlock et al.			Dry	
288	Randolph....	3	4 S	5 W	3,640	Joachim	Mabee et al.			Dry	
289	Randolph....	28	6 S	6 W	716	L. Mississippian	Pioneer Oil and Gas Co.			Dry	
290	Randolph....	4	5 S	6 W	350	Chester	S. B. Schlosburg			Dry	

[4] Gas well for local use.

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
291	Randolph	29	4 S	7 W	508	L. Mississippian	Dr. Seward et al.			Dry	
292	Randolph	12	5 S	9 W	1,910	St. Peter	Ames Drilling Co.			Dry	
293	Richland	21	3 N	9 E	3,121	"McClosky sand"	Max Pray et al.	139			Noble extension
294	Richland	28	3 N	9 E	3,064	Ste. Genevieve	Mammoth Prod. & Refiners	2,192			Noble extension
295	Richland	5	3 N	10 E	3,124	Ste. Genevieve	Papoose Oil Co.			Dry	
296	Richland	2	4 N	10 E	3,158	St. Louis	Gulf Oil Co.			Dry	
297	Richland	34	4 N	10 E	3,099	Ste. Genevieve	Morrison and German			Dry	
298	Richland	29	4 N	9 E	3,180	Ste. Genevieve	American Exploration Co.			Dry	
299	Richland	26	4 N	10 E	3,036	"McClosky"	Pyramid Petrol. Corp.	1,000			Olney
300	Richland	23	3 N	9 E	3,080	"McClosky"	American Nat'l Drill. Co.	20			Noble extension
301	Richland	7	2 N	9 E	2,984	"McClosky"	J. V. Wicklund	1,053			Schnell
302	Richland	26	4 N	9 E	2,929	Cypress	Pure Oil Co.	514			Noble extension
303	Richland	21	4 N	10 E	3,208	Ste. Genevieve	Wicklund Development			Dry	
304	Richland	35	4 N	10 E	3,141	Ste. Genevieve	Kingwood Oil Co.			Dry	
305	St. Clair	27	1 N	10 W	472	"Trenton"	Pioneer Oil & Gas Co.	100			Dupo extension
306	St. Clair	27	1 N	10 W	523	"Trenton"	Pioneer Oil & Gas Co.	65			Dupo extension
307	St. Clair	13	2 S	6 W	1,012	Ste. Genevieve	Group Oil Corp.			Dry	
308	St. Clair	20	2 N	6 W	1,023	St. Louis	Neil et al.			Dry	
309	St. Clair	31	1 S	7 W	1,234	L. Mississippian	Mossbaugh			Dry	
310	St. Clair	28	3 S	6 W	895	L. Mississippian	Group Oil Co.			Dry	
311	Saline	3	10 S	6 E	1,502	L. Chester	W. J. Rodgers et al.			Dry	
312	Saline	12	8 S	6 E	360	Pennsylvanian	C. F. Bolton			Dry	
313	Saline	13	9 S	7 E	2,601	L. Mississippian	Bolton et al.			Dry	
314	Sangamon	24	15 N	7 W	2,257	St. Peter	Walter Wittlinger			Dry	
315	Schuyler	27	2 N	1 W	850	"Niagaran"	O. D. Arnold et al.			Dry	
316	Shelby	19	10 N	4 E	2,012	Ste. Genevieve	Whisenant and Henshaw			Dry	
317	Shelby	4	11 N	3 E	1,951	Ste. Genevieve	Milan et al.			Dry	
318	Shelby	27	12 N	3 E	1,804	Ste. Genevieve	Cypress Oil & Gas Co.			Dry	
319	Shelby	25	11 N	2 E	1,886	Ste. Genevieve	Borah et al.			Dry	
320	Shelby	17	12 N	4 E	2,072	St. Louis	Kingwood Oil Co.			Dry	
321	Shelby	16	12 N	4 E	1,921	Ste. Genevieve	Simar Oil Co.			Dry	
322	Shelby	30	12 N	4 E	1,865	Bethel	O. J. Connell			Dry	
323	Shelby	9	9 N	3 E	2,008	Ste. Genevieve	A. A. Baker			Dry	
324	Shelby	15	9 N	3 E	1,716	Bethel	Paul Braner et al.			Dry	
325	Shelby	4	9 N	3 E	1,677	Bethel	Roy T. Moore & Black			Dry	
326	Shelby	24	10 N	3 E	1,702	Cypress	Dan Moore et al.			Dry	
327	Shelby	26	10 N	4 E	1,900	Basal Chester	Ogg & Joly			Dry	
328	Shelby	32	10 N	4 E	1,920	Ste. Genevieve	Black et al.			Dry	
329	Shelby	1	9 N	4 E	2,129	St. Louis	Kingwood Oil Co.			Dry	
330	Shelby	3	10 N	5 E	2,175	Ste. Genevieve	Jackson & Fisher			Dry	
331	Shelby	8	12 N	2 E	2,094	L. Mississippian	W. S. Tatum			Dry	
332	Shelby	34	12 N	4 E	2,012	"McClosky"	Prunty Producing Co.			Dry	
333	Vermilion	13	18 N	14 W	1,430	"Niagaran"	A. M. Meyers et al.			Dry	
334	Wabash	25	1 S	13 W	2,635	Ste. Genevieve	Hayes & Myer			Dry	
335	Wabash	28	1 N	12 W	1,501	Biehl	Cecil Kneipp et al.			Dry	
336	Wabash	9	1 S	12 W	1,515	Biehl	Myers et al.			Dry	
337	Wabash	31	1 N	12 W	2,408	L. Mississippian	Harry T. Martin			Dry	
338	Wabash	12	1 N	13 W	1,753	B. Pennsylvanian	Charles Foreman			Dry	
339	Wabash	13	1 S	13 W	3,500	L. Mississippian	Guilde & Jones			Dry	
340	Warren	35	12 N	1 W	495	"Niagaran"	W. C. & W. Co.			Dry	

TABLE 2.—(*Continued*)

Important Wildcats Drilled in 1938

	County	Location			Total Depth, Ft.	Deepest Horizon Tested	Drilled by	Initial Production per Day		Remarks	Field Name of New Discoveries and Extensions
		Sec. Survey	Twp. Lat.	Rge. Long.				Oil, U. S. Bbl.	Gas, Millions Cu. Ft.		
341	Warren.....	26	8 N	1 W	875	"Trenton"	L. E. Ketcherside et al.			Dry	
342	Washington..	28	1 S	4 W	1,087	Bethel	Frost, Vickers & Patton			Dry	
343	Washington..	16	3 S	2 W	1,426	B. Chester	B. D. Bitterman et al.			Dry	
344	Washington..	22	1 S	1 W	1,925	L. Mississippian	Parshall-Graham Oil Co.			Dry	
345	Washington..	8	1 S	3 W	1,499	L. Mississippian	Cox et al.			Dry	
346	Washington..	4	2 S	5 W	1,238	L. Mississippian	Morris et al.			Dry	
347	Washington..	11	1 S	1 W	1,030	B. Pennsylvanian	Salvage Oil & Fuel Co.			Dry	
348	Washington..	6	3 S	2 W	1,443	Bethel	S. Townsend et al.			Dry	
349	Washington..	25	1 N	1 W	1,425	L. Chester	C. E. Phelps			Dry	
350	Washington..	31	1 N	2 W	1,715	L. Mississippian	Schlafly et al.			Dry	
351	Washington..	33	1 S	5 W	900	Bethel	G. A. Morris			Dry	
352	Washington..	19	1 S	5 W	1,683	Ste. Genevieve	Thompson Drilling Co.			Dry	
353	Washington..	30	1 S	5 W	1,422	Bethel	Venture Oil Co.			Dry	
354	Washington..	16	3 S	2 W	1,618	Ste. Genevieve	Bitterman et al.			Dry	
355	Washington..	29	3 S	5 W	1,517	L. Mississippian	E. C. Lang			Dry	
356	Washington..	12	1 S	1 W	1,680	Bethel	Morris et al.			Dry	
357	Washington..	7	2 S	3 W	1,475	Ste. Genevieve	Hall et al			Dry	
358	Washington..	19	3 S	1 W	3,537	Bethel	Thompson Drilling Co.			Dry	
359	Washington..	12	1 S	3 W	1,551	Ste. Genevieve	L. J. Gordon			Dry	
360	Washington..	10	3 S	4 W	1,373	St. Louis	J. B. Oberholtzer			Dry	
361	Wayne.....	16	3 S	7 E	3,287	"McClosky"	Texas Oil Co.	400			Aden
362	Wayne.....	14	1 N	9 E	3,273	Ste. Genevieve	B. C. Morrison			Dry	
363	Wayne.....	21	1 N	5 E	3,200	Ste. Genevieve	Tarpon (Kennova) Oil Co.			Dry	
364	Wayne.....	30	1 S	5 E	3,250	L. Mississippian	Gulf Refining Co.			Dry	
365	Wayne.....	33	2 S	7 E	3,325	"McClosky"	H. H. Weinert, Inc.	400			North Aden
366	Wayne.....	16	3 S	9 E	3,438	"McClosky"	Iroquois Oil & Gas Co.	150			Leech Twp.
367	Wayne.....	21	2 S	7 E	3,443	Ste. Genevieve	H. H. Weinert, Inc.			Dry	
368	Wayne.....	8	2 S	8 E	3,394	"McClosky"	Ed Martin & Stokes			Dry	
369	Wayne.....	8	3 S	9 E	3,500	Ste. Genevieve	Al Stengle et al.			Dry	
370	Wayne.....	33	1 S	7 E	3,336	Ste. Genevieve	Roche & Voyles			Dry	
371	Wayne.....	2	1 S	8 E	3,100	Ste. Genevieve	A. P. Muhlbach	48			Mt. Erie
372	Wayne.....	4	2 S	7 E	3,269	Ste. Genevieve	Roche & Voyles	401			Boyleston
373	White.....	26	5 S	9 E	3,210	Ste. Genevieve	Mazda Oil Corp.			Dry	
374	White.....	3	5 S	9 E	3,408	Ste. Genevieve	Palmer Corp.			Dry	
375	White.....	12	7 S	8 E	3,065	Ste. Genevieve	Arab Petroleum Co.			Dry	
376	White.....	12	4 S	9 E	3,919	Salem	Sun Oil Co.			Dry	
377	Williamson...	4	10 S	2 E	2,100	Ste. Genevieve	Ge-Lo Oil Syndicate			Dry	

	In Proven Fields	Wildcats*
Number of wells drilling Dec. 31, 1938	280	91
Number of oil wells completed during 1938	1,959	25
Number of gas wells completed during 1938	20	6
Number of dry holes completed during 1938	170	359

* One-fourth mile or more from production.

TABLE 3.—*Summary of Drilling and Initial Production in Illinois for* 1938

County	Number of Wells Drilled in 1938			Total Initial Production		Footage Drilled in 1938	
	Total Completed	Total Producing		Oil, Bbl.	Gas, Millions Cu. Ft.	Total	Producing Wells
		Oil	Gas				
Bond	12	1	1	15	0.1	20,292	2,779
Brown	2	0	0	0	0.0	1,215	0
Bureau	2	0	0	0	0.0	1,797	0
Cass	1	0	0	0	0.0	585	0
Champaign	5	0	2[2]	0	1.6	3,305	0
Christian	4	0	0	0	0.0	5,595	0
Clark	24	7	3[2]	111	0.9	17,585	4,607
Clay	153	141	0	65,970	0.0	469,074	430,398
Clinton	444	398	0	54,228	0.0	610,632	542,219
Coles	7	0	0	0	0.0	14,740	0
Crawford	19[1]	7	1[2]	32	0.3	23,717	9,801
Cumberland	5	0	0	0	0.0	12,547	0
Edgar	5	0	0	0	0.0	6,688	0
Effingham	8	0	0	0	0.0	22,240	0
Fayette	575	509	1[2]	117,094	4.0[4]	910,818	804,573
Franklin	6	0	0	0	0.0	657	0
Fulton	1	0	0	0	0.0	18,706	0
Hamilton	1	0	0	0	0.0	3,460	0
Hancock	2	0	0	0	0.0	1,099	0
Hardin	1	0	0	0	0.0	2,345	0
Iroquois	1	0	0	0	0.0	1,096	0
Jackson	3	0	0	0	0.0	8,042	0
Jasper	6	0	0	0	0.0	15,609	0
Jefferson	68	40	0	9,031		148,432	82,099
Lawrence	36	10	15[3]	342	151.0	48,666	33,543
McDonough	7	2	0	3	0.0	4,008	869
Macon	2	0	0	0	0.0	4,077	0
Macoupin	9	0	2[2]	0	1.4	6,983	865
Madison	4	0	0	0	0.0	5,553	0
Marion	729	643	0	191,766	0.8[4]	1,258,330	1,096,453
Menard	1	0	0	0	0.0	1,570	0
Monroe	1	0	0	0	0.0	780	0
Montgomery	7	0	1[2]	0	0.1	6,893	905
Morgan	4	0	0	0	0.0	4,165	0
Moultrie	2	0	0	0	0.0	3,871	0
Perry	5	0	0	0	0.0	9,485	0
Piatt	1	0	0	0	0.0	3,021	0
Pope	1	0	0	0	0.0	1,760	0
Randolph	5	0	0	0	0.0	7,124	0
Richland	180	135	0	68,825	0.0	560,371	412,661
St. Clair	11	5	0	745	0.0	7,787	3,623
Saline	4	0	0	0	0.0	4,463	0
Sangamon	1	0	0	0	0.0	2,257	0
Schuyler	1	0	0	0	0.0	850	0
Shelby	17	0	0	0	0.0	32,844	0
Vermilion	1	0	0	0	0.0	1,430	0
Wabash	23	6	0	225	0.0	38,627	9,328
Warren	2	0	0	0	0.0	1,370	0
Washington	19	0	0	0	0.0	29,544	0
Wayne	107	80	0	35,571	0.0	334,740	246,673
White	4	0	0	0	0.0	13,602	0
Williamson	1	0	0	0	0.0	2,100	0
Total	2,539	1,984	26	543,958	160.2	4,766,047	3,677,373

[1] Includes two pressure wells.
[2] Gas used on the lease and for local heating and lighting.
[3] Two wells producing gas, which is used on the lease.
[4] Gas produced with the oil.

TABLE 4.—*Total Initial Production of Wells Drilled in New Fields for* 1938

Field	Barrels	Field	Barrels	Field	Barrels
Patoka	980	Dix	8,143	St. James	3,638
Clay City	70,786	Aden	1,165	Roaches	464
Rinard	0	Flora	2,101	Elk Prairie	20
Noble	51,996	Schnell	2,663	Sorento	15
Cisne	12,013	Lake Centralia-		Boyleston	1,203
Centralia (New)	78,157	Salem	165,588	Marcoe	204
Beecher City-Lou-		Ina	200	Mt. Erie	48
den	113,456	North Aden	19,435		
Olney	14,166	Leech Township	459	Total	546,900

TABLE 5.—*Wells in the New Fields, December* 31, 1938

Field, *County*	Producing Wells	Dry Holes[1]	Drilling Wells	Rigs Standing	Rigging Up	Locations	Acres
Patoka, *Marion*	104[2]	20	0	0	0	0	465
Clay City, *Clay, Wayne*	222	16	3	7	1	3	4,750
Rinard, *Wayne*	1	2	0	3	0	1	10
Noble, *Richland*	145[3]	29	0	2	1	0	3,150
Cisne, *Wayne*	25	6	3	0	1	1	575
Centralia (New), *Clinton, Marion*	526	36	3	15	1	1	2,000
Beecher City-Louden, *Fayette*	488	25	17	67	12	2	15,860
Olney, *Richland*	30	11	2	1	0	0	380
Dix, *Jefferson*	35	0	1	1	0	0	615
Aden, *Wayne*	4	2	0	0	0	0	160
Flora, *Clay*	9	2	2	3	0	0	140
Schnell, *Richland*	4	5	0	0	0	0	40
Lake Centralia-Salem, *Marion*	480	17	24	97	11	23	7,520
Ina, *Jefferson*	1	2	0	0	0	0	10
North Aden, *Wayne*	40	4	1	3	1	2	690
Leech Township., *Wayne*	2	0	0	0	3	0	20
St. James, *Fayette*	24	0	4	3	0	3	270
Roaches, *Jefferson*	2	0	1	2	0	1	20
Elk Prairie, *Jefferson*	1	0	0	0	0	0	10
Sorento, *Bond*	1	0	0	0	0	0	10
Boyleston, *Wayne*	1	0	2	0	0	0	10
Marcoe, *Jefferson*	1	0	0	0	0	0	10
Mt. Erie, *Wayne*	1	0	0	0	0	0	10
Russellville (gas), *Lawrence*	15	5	0	2	0	1	500
	2,157	182	63	206	31	38	37,225

[1] Within ¼ mile of production.
[2] Eleven producing wells were abandoned during 1938.
[3] Eight producing wells were abandoned during 1938.

TABLE 6.—*Discovery Wells of the New Fields and Extensions in Illinois for* 1938

Field	County	Company, Well and Location	Total Depth, Ft.	Producing Formation				
				Depth, Ft.	Name	Initial Production, Bbl.	Type of Discovery	Date of Completion of Discovery Well
North Olney	Richland	Pyramid Oil Co., University of Chicago 1, NW NW NW 26-4N-10E	3,036	3,030	McClosky	1,000	Field	5-4-38
Dix	Jefferson	Carter Oil Co., Tate 1, C W NW NE 10-1S-2E	1,990	1,980	Bethel	58	Field	1-2-38
Aden	Wayne	Texas Co., Silverman 1, C E SW NW 16-3S-7E	3,287	3,276	McClosky	385	Field	1-15-38
North Aden	Wayne	H. H. Weinert, Inc., Twist 1, NE NW SW 33-2S-7E	3,325	3,308	McClosky	400	Field	7-27-38
Flora	Clay	Kingwood Oil Co., Graham 1, C S SW NE 13-3N-6E	2,983	2,973	McClosky	275	Field	6-22-38
Flora	Clay	Ohio Oil Co., Hardy 1, NW SE SE 9-3N-7E	2,967	2,958	McClosky	459	Extension	7-20-38
Schnell	Richland	Wicklund Development Co., McCauley 1B, NE SW NW 7-2N-9E	2,996	2,980	McClosky	1,053	Field	6-22-38
Lake Centralia-Salem	Marion	Texas Co., Tate 1, NW NW 5-1N-2E	1,810	1,692	Bethel	732	Field	7-6-38
Ina	Jefferson	Nollem Oil & Gas Co., Benoist-Kelley 1, NE NW NE 25-4S-2E	3,007	3,002	St. Louis	200	Field	7-27-38
St. James	Fayette	Rosenthal et al, Washburn 1, NE SE NW 30-6N-3E	1,622	1,600	Cypress	188	Field	9-14-38
Leech Township	Wayne	Iroquois Oil & Gas., Walker 1, C NW NW NW 16-3S-9E	3,438	3,428	McClosky	150	Field	9-14-38
Roaches	Jefferson	Magnolia Petroleum Co., Harvey 1, NW NE SW 22-2S-1E	2,263	2,239	McClosky, Rosiclare	217	Field	11-29-38
Elk Prairie	Jefferson	Benedum-Trees, Jefferson Oil & Gas 1, C NW NE 16-4S-2E	2,751	2,718	McClosky	25	Field	11-9-38
Boyleston	Wayne	Roche & Boyles, McPherson 1, C S SE NE 4-2S-7E	3,269	3,253	McClosky	400	Field	12-13-38
North Noble	Richland	Pure Oil Co., Wakefield 1, C W NW NE 26-4N-9E	2,583	2,564	Cypress	514	Extension	10-11-38
West Clay City	Clay	Wiser Oil Co., Irwin 1, C N SE NW 12-2N-7E	3,076	3,060	McClosky	273	Extension	1-19-38
Russellville (gas)	Lawrence	Kesl et al. Gray 1, C N NW NE 13-4N-11W	1,061	1,060	Buchanan	2,651[1]	Field	7-23-38
Sorento	Bond	De Mayo et al, Dressor 1, SW NE NW 21-6N-4W	1,830	1,800	Niagaran	15	Field	12-5-38
Marcoe	Jefferson	Magnolia Petroleum Co., Dare 1, SE SW NE 22-3S-2E	2,765	2,746	McClosky	237	Field	12-24-38
Mt. Erie	Wayne	Mulbach, Anderson 1, NW NW NW 2-1S-8E	3,092	3,080	McClosky	48	Field	12-31-38
Clay City	Clay	Danville Oil Drillers, Inc., C. D. Duff 1, NE SE NE 19-3N-8E	3,047	3,016	McClosky	124	Extension	1-10-38
Clay City	Clay	Wiser Oil Co., Irwin 1, C N SE NW 12-2N-7E	3,076	3,012	McClosky	273	Extension	1-19-38
Centralia	Clinton	Adams Oil & Gas Co., Hefter 1, SE NE 13-1N-1W	1,370	1,350	Bethel	275	Extension	2-9-38
Beecher City-Louden	Fayette	Farelly et al. H. Lilley 1, SE SW SE 16-8N-3E	1,573	1,561	Bethel	35	Extension	5-25-38
Noble	Richland	Max Pray et al. Runyon 1, SW SW SE 21-3N-9E	3,121	3,036	McClosky	139	Extension	2-15-38
Noble	Richland	Mammoth Producers & Refiners, Bell 1, NW NE SW 28-3N-9E	3,064	3,026	McClosky	2,162[2]	Extension	2-15-38
Noble	Richland	American National Drilling Co., Everson 1, NE NE SE 23-3N-9E	3,080	3,043	McClosky	20	Extension	5-25-38

[1] Thousands of cubic feet.
[2] Estimated.

TABLE 7.—*Completions and Production in Illinois from January 1, 1937 to December 31, 1938*

Date	Completions	Number of Producing Wells	Production, Thousands of Barrels		
			New Fields	Old Fields[1]	Total[2]
1937					
January	5	1		368	368
February	6	6		343	343
March	9	5		410	410
April	15	8		386	386
May	14	10		416	416
June	22	16	53	410	463
July	27	18	120	410	530
August	49	31	266	408	674
September	92	63	452	397	849
October	76	56	520	392	912
November	73	41	592	398	990
December	61	37	755	330	1,085
	449	292	2,884[3]	4,542	7,426
1938					
January	57	40	809	319	1,128
February	59	35	778	330	1,108
March	107	82	918	412	1,330
April	89	71	1,061	327	1,388
May	122	107	1,076	364	1,440
June	192	147	1,093	369	1,462
July	176	136	1,284	358	1,642
August	207	149	1,691	371	2,062
September	255	199	2,194	359	2,553
October	431	345	2,431	337	2,768
November	394	330	2,722	345	3,067
December	452	369	3,608	373	3,981
	2,541	2,010	19,665	4,264	23,929

[1] Difference between total production for the new fields and the U. S. Bureau of Mines total.

[2] The figures in the total production are from the U. S. Bureau of Mines. Other figures are from various sources.

[3] This figure is greater than the total by months because monthly production figures from the new fields were not available until June 1937.

Gas was first discovered in the vicinity of Russellville, Ill., in northeastern Lawrence County, on March 17, 1937. The Warren Hastings et al., Lagow No. 1A, drilled in sec. 30, T. 5 N., R. 10 W., obtained production in a Pennsylvanian sandstone at a depth of 619 ft. The initial production was 824,000 cu. ft. Another producing well was drilled in the same section a short time later and four dry holes were drilled offsetting the two producers. The Kentucky Natural Gas Corporation

of Owensboro, Ky., constructed a 3-in. line from the Oaktown, Ind., gas field to take the gas from these wells.

In July 1938, the Joe Kesl et al., Scott Gray No. 1, drilled in sec. 13, T. 4 N., R. 11 W., obtained production in the Buchanan sandstone at a depth of 1061 ft. The initial production was 2,651,000 cu. ft. The well was deepened a few feet in the sand and the production was increased to 16,000,000 cu. ft. Thirteen producing wells were drilled in the field during 1938, and drilling activity is still continuing. The highest initial productions were from 20 to 30 million cubic feet and the average for all of the wells was 14 million. The present field includes the N½ of sec. 13, the S½ of sec. 12, T. 4 N., R. 11 W., and the SW¼ of sec. 7, T. 4 N., R. 10 W. Deeper potential oil-producing and gas-producing formations have not been tested in the field. The northwest edge of the field has been fairly well defined by three dry holes. The proven acreage in both fields at the end of the year totaled 500.

The Kentucky Natural Gas Corporation during 1938 replaced the 3-in. line from Oaktown to sec. 30, T. 5 N., R. 10 W., with a 6-in. line, and constructed two 4-in. lines to the Buchanan sand field.

An analysis of the gas from the north field shows that the gas is composed mainly of methane with only a trace of ethane, less than 1 per cent carbon dioxide and a small percentage of nitrogen. The gas from the south field is also composed largely of methane with a small percentage of ethane, nitrogen and carbon dioxide. The B.t.u. value of both gases is approximately 950 per cubic foot.

Improved Recovery Methods

Repressuring.—Little new work was undertaken by the oil companies during 1938 to increase recovery of oil in the old fields of Illinois. Practically all of the previous repressuring plants were continued in operation.

In the Carlyle pool, Clinton County, a water-flooding operation was discontinued in October 1937, and air repressuring started, using the same input wells previously used for water in December 1937. Continuous operation of the pressure plant began in February 1938.

In the Louden (Beecher City) field the Carter Oil Co. has undertaken pressure maintenance with gas produced from their leases in sec. 15, T. 8 N., R. 3 E. Five input wells were drilled in the section (five-spot). Both the Cypress and Bethel sands are repressured in each well. A packer is set below the Cypress sand and the gas to the Bethel sand passes through tubing, whereas that to the Cypress is from the casing. The casing is perforated for both sands. The project is just getting started and no results have been noticed, as the adjacent producing wells are prorated. An average of about 15,000 cu. ft. of gas is injected into each sand per day. Two 300-hp. compressors are being used.

It is reported that a similar pressure-maintenance project is planned by some of the operators in the Salem pool.

Acidization.—Ten acidizations were reported in the old southeastern field, of which seven yielded substantial increases in production and three yielded no increase. Acidizing is standard practice in completing wells in the central basin fields producing from the McClosky.

Petroleum Conference

The sixth annual conference of the Illinois-Indiana Petroleum Association was held at Robinson, June 4, 1938, and was attended by more than 400 persons. The technical sessions included papers on geology and field operating problems.

Outlook

Drilling development exceeding that of 1938 may be expected in 1939. Multiple sand production is proved in the Salem and Louden fields, which will require the drilling of many additional wells. The large amount of wildcat drilling will doubtless result in numerous discoveries of new fields in 1939.

Acknowledgments

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FOOTNOTES TO COLUMN HEADINGS—TABLE 1

[a] Areas where both oil and gas are produced are included under heading "Oil."
[b] Wells producing both oil and gas are classified as "Producing Oil."
[c] Gas wells are those producing gas, but include those producing wet gas, from which casinghead gasoline may be produced.
[d] Bottom-hole pressures are preceded by "e." All other figures represent pressures at casinghead with well closed.
[e] Cam, Cambrian; Ord, Ordovician; Sil, Silurian; Dev, Devonian; Mis, Mississippian; MisL, Lower Mississippian; MisU, Upper Mississippian; Pen, Pennsylvanian; Per, Permian; Tri, Triassic; Jur, Jurassic; CreL, Lower Cretaceous; CreU, Upper Cretaceous; Eoc, Eocene; Olig, Oligocene; Mio, Miocene; Pli, Pliocene.
[f] S, sandstone; SH, sandstone, shaly; Ss, soft sand; H, shale; L, limestone; LS, limestone, sandy; C, chalk; A, anhydrite; D, dolomite; Da, arkosic dolomite; GW, granite wash; P, serpentine; O, oölite; Slt, siltstone.
[g] Figures are entered only for fields where the reservoir rock is of pore type. Figures represent ratio of pore space to total volume of net reservoir rock expressed in per cent. "Por" indicates that the reservoir rock is of pore type but said ratio is not known by the author. "Cav" indicates that the reservoir rock is of cavernous type; "Fis," fissure type.
[h] A, anticline; AF, anticline with faulting as important feature; Af, anticline with faulting as minor feature; AM, accumulation due to both anticlinal and monoclinal structure; H, strata are horizontal or near horizontal; MF, monocline-fault; MU, monocline-unconformity; ML, monocline-lens; MC, monocline with accumulation due to change in character of stratum; MI, monocline with accumulation against igneous barrier; MUP, monocline with accumulation due to sealing at outcrop by asphalt; D, dome; Ds, salt dome; T, terrace; TF, terrace with faulting as important feature; N, nose; S, syncline.
[i] Information will be found in text as indicated by symbols; A, name of author, other than above, who has compiled the data on the particular field; C, chemical treatment of wells; G, gas-oil ratios; P, proration; U, unit operation; R, references; W, water; O, other information.

EXPLANATION

Generally in Table 1 the unit for presentation of data is a field. For our purposes a field is defined as the whole of a surface area wherein productive locations are continuous. Such unit commonly includes and surrounds nonproductive areas. Such unit commonly includes a great variety of geologic conditions—several units of continuous productive reservoirs of distinctly different structure and of distinctly different stratigraphy. Therefore it is hoped that our authors will subdivide "field" so as to enable students to make analyses that may have scientific and/or commercial value.

As to each space in the tabulation, it is either (1) not applicable, (2) the proper entry is not determinable, (3) the proper entry is determinable, but not determinable from data available to the author, (4) the proper entry is determinable by the author. In spaces not applicable, the author will please draw horizontal lines; in spaces where the proper entries are not determinable, the author will please insert *x*; in spaces where the proper entries are determinable but not determinable from data available to the author, the author will please insert *y*; in spaces where the proper entries are determinable by the author he will, of course, make such entries. Generally, *y* implies a hope that in some future year a definite figure will be available.

Inability to determine precisely the correct entry for a particular space should not lead the author to insert merely *y*. Contributions of great value may be made by the author in many cases where entries are not subject to precise determination. In such cases the author should use his good judgment and make the best entry possible under the circumstances. For many spaces, the correct entries represent the opinion of the author (for example, "Area Proved") and in such cases the entries need not be hedged to such extent as in cases where the quantities are definite yet can be ascertained only approximately by the author.

In cases under definite headings but where figures are only approximate, the author may use *x*. For example, if the total production of a field is known to be between 1,800,000 and 1,850,000, the author may report 1,8*xx*,*xxx*; or if the production is between 1,850,000 and 1,900,000, the author may report 1,9*xx*,*xxx*.

Where a numeral is immediately to the left of *x* or *y*, such numeral represents the nearest known number in that position.

As to quantity of gas produced from many fields the question will arise as to whether the figures should include merely the gas marketed or should include also estimates of gas used in operations and gas wasted. Although rough approximations

may be involved, our figures should represent as nearly as possible the total quantity of gas removed from the reservoir.

While we have not provided a column for showing the thickness of the productive zone, generally the difference between average depth to bottoms of productive wells and average depth to top of productive zone will represent approximately the average thickness of the productive zone. For fields where this is not true because of unusually high dips, or for other reasons, it is suggested that the authors indicate in their texts the approximate average thickness of the productive zone.

The figure representing net thickness of producing rock should correspond to the total of the net portions of the producing zone which actually yield oil into the drill hole. It is recognized that for some fields the authors can make only rough guesses—so rough that figures would be of no value. In such cases the authors should enter either x or y, whichever is more appropriate.

We are particularly anxious to have every author give due consideration to the determination of structural conditions of each oil and/or gas body. Please consider each oil and/or gas reservoir and indicate its structure. The mere fact that a reservoir is on an anticline is not proof that the structural condition affecting the accumulation is anticlinal; for example, an oil and/or gas body limited by the upper margin of a lens on the limb of an anticline is "ML" as to structure. By all means, if the oil body occupies any position in the lens other than its upper limit, please so indicate clearly by footnote, for "ML" means, unless modified, that the accumulation is at the upper part of the lens. In every case where the oil and/or gas body terminates short of the up-dip continuity of the reservoir, please carefully check your evidence and then appropriately record your conclusion. "Terrace," "Nose" and "Syncline" are the only terms in our legend which presume such continuity.

In Table 2 are listed the important wildcat wells completed during the year. By the term "important" is meant: wells discovering new fields; wells resulting in the discovery of important extensions to old fields; wells discovering new zones in old fields; wells condemning important areas or resulting in significant stratigraphic information, even if the wells are dry; and exceptionally deep wells. At the foot of this table the total number of wells drilled in each district is given, segregated as to oil wells, gas wells and dry holes. The number of wells drilling on Dec. 31, 1938 are in two divisions, designated as wildcat wells and wells in proven fields.