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DEVELOPMENTS IN EASTERN INTERIOR BASIN IN 1944¹

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ABSTRACT

Drilling in the Eastern Interior basin increased 20 per cent and oil production decreased 4.4 per cent in 1944. The increase in drilling followed the change in the well-spacing rules in Supplementary Order No. 5, dated April 19, 1944, to Petroleum Administrative Order No. 11. This permitted the drilling of 1 well in 10 acres to any formation above the base of the Aux Vases formation regardless of depth, and 1 well in 20 acres to any formation between the base of the Aux Vases and the base of the Fredonia. There was little deep testing in 1944.

Production in Kentucky of 9,621,000 barrels of oil in 1944 was the highest annual production yet recorded for that state, an increase of 22 per cent over that of 1943. Illinois production in 1944 was down 6 per cent from that of 1943 and Indiana production was down 4 per cent.

Drilling in 1945 is expected to continue at nearly the same rate as in 1944, with continued discovery of new pools and extensions.

INTRODUCTION

Drilling in the Eastern Interior basin in 1944 increased by one-fifth partly as a result of the relaxation of the federal Government's well-spacing restrictions effective on April 19, 1944. Forty-eight new pools were discovered, all of them small. Total production in 1944 was approximately 90 million barrels which amounted to 5.4 per cent of the total for the United States.

The Eastern Interior basin (Fig. 1) comprises about four-fifths of Illinois plus the adjoining parts of Indiana and Kentucky and has a total area of approximately 50,000 square miles. Oil production is largely confined to the southern half of the basin.

DEVELOPMENT

Approximately 2,967 wells were drilled for oil and gas in the Eastern Interior basin in 1944 as compared with 2,473 in 1943, an increase of 20 per cent. The following table shows the distribution by states.

¹ Reprinted from *Bull. Amer. Assoc. Petrol. Geol.*, Vol. 29, No. 6 (June, 1945), pp. 685-692.

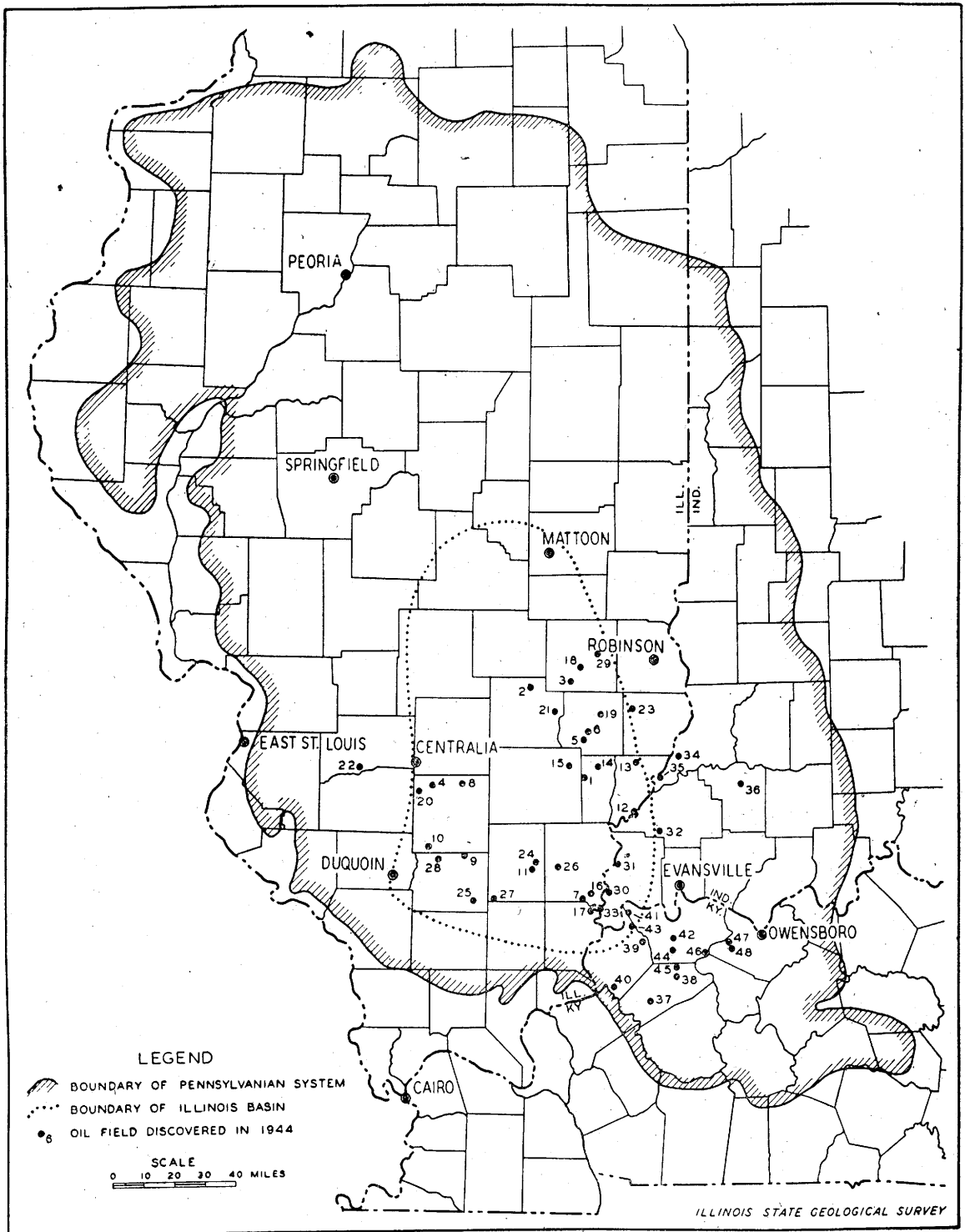


FIG. 1.—Map of Eastern Interior basin showing new oil pools discovered in 1944. For list of pools see Table I.

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	<i>Number of Completed Wells</i> <i>(Excluding water and gas input wells, salt-water disposal wells, and old wells worked over)</i>	
	1943	1944
Illinois	1792	1991
Southwestern Indiana	465	276
Western Kentucky	216	700*
	<hr style="width: 50px; margin: 0 auto;"/> 2473	<hr style="width: 50px; margin: 0 auto;"/> 2967

* Approximate.

The total oil production from the Eastern Interior basin in 1944 amounted to 90,400,000 barrels as compared with 94,528,000 barrels in 1943, a decrease of 4.4 per cent. Illinois produced 77,413,000 barrels of which it is estimated 90 per cent was from Mississippian strata, 5 per cent was from Devonian strata, 3.5 per cent was from Pennsylvanian strata, 1 per cent from Ordovician strata and 0.5 per cent from Silurian strata.

Production in Kentucky west of the Cincinnati arch increased from approximately 6,160,000 barrels in 1943 to approximately 7,800,000 barrels in 1944, an increase of 26 per cent. In southwestern Indiana production decreased from 5,273,000 barrels in 1943 to 5,088,000 in 1944, a decrease of 4 per cent.

Most of the wildcat drilling in the Eastern Interior basin in 1944 was in the deep part of the basin, and most of the new pools discovered were in the deep basin area.

NEW POOLS DISCOVERED

As shown in Table I, 48 new oil pools were discovered in 1944 in the Eastern Interior basin. Of these 29² are in Illinois, 7 are in Indiana, and 12 are in Kentucky.

The most noteworthy of the Illinois pools are: Boyd, Jefferson County, with 16 wells at the end of the year and a total production to the end of 1944 of 158,000 barrels; Roaches North, Jefferson County, with 25 wells and total production of 149,000 barrels; Divide West, Jefferson County, with 13 wells and total production of 67,000 barrels; and Calhoun, Richland County, with 6 wells and total production of 71,000 barrels.

ILLINOIS

All but one of the new pool discovery wells produced from Mississippian formations, of which 13 were in Chester series sandstones and 15 in the Ste. Genevieve formation of the Lower Mississippian. There was one small discovery well in the Pennsylvanian, the Lancaster East pool, Wabash County.

New producing formations.—Additional producing formations discovered in Illinois oil pools in 1944 numbered 37 of which 3 were in the Pennsylvanian, 18 were in the Chester series, and 16 were in the Ste. Genevieve formation of the Lower Mississippian series. There were no discoveries of new producing formations below the Ste. Genevieve formation.

² This included Whittington West pool, Franklin County, which was discovered in December, 1943, but was not named until 1944.

TABLE I
POOLS DISCOVERED IN EASTERN INTERIOR BASIN IN 1944

Pool	County	Company and Farm	Location	Total Depth (Feet)	Depth to Top (Feet)	Producing Formation	Initial Production (Barrels) ^a	Date of Completion of Discovery	No. of Wells Producing in Field Jan. 2, 1945
ILLINOIS									
1. Bennington South	Edwards	Nash Redwine—G. C. Jones I	31-1N-10E	3253	3238	McClosky	132+67	7-18-44	1
2. Bible Grove East	Clay	Wisc. Rig. and Doran—Murvin I	22-5N-7E	2517	2508	Cypress	156	12-19-44	2
3. Bogota South	Jasper	Schuller & Witt—Lourance I	3-2N-9E	3055	3054	McClosky	57	7-4-44	1
4. Boyd	Jefferson	Cameron—Bize I	30-1S-2E	2083	2050	Bethel	167	8-22-44	15
5. Calhoun	Richland	Phillips Pet.—Jennings I	6-2N-10E	3280	3166	Levias	178	8-22-44	6
6. Calhoun North	White	Pure Oil—Koertge I	33-3N-10E	3276	3165; 3184	Rosclaire; McClosky	149+97	1-2-45	1
7. Concord South	Jefferson	Great Lakes Carbon—Burriss I	7-7S-10E	3333 (Pb. 2411)	2313	Tar Springs	80	9-12-44	11
8. Divide West	Franklin	Texas Co.—W. Green I	15-1S-3E	2862	2752	McClosky	55	2-29-44	2
9. Ewing	Jefferson	Central Pipe Line—Rose I	4-5S-3E	2080	2073	McClosky	146+15	12-5-44	1
10. Fitzgerald	Jefferson	Texas Co.—Inland Steel I	25-4S-1E	3012 (Pb. 2776)	2750	Bethel	53+46	12-12-44	1
11. Hoodville East	Hamilton	Nat'l Assoc. Pet.—Stocker I	33-5S-7E	3387	3364	McClosky	80+10	6-13-44	1
12. Keensburg South	Wabash	Central Pipe Line—Garst I	27-2S-13W	2728	2713	Levias	173	6-13-44	2
13. Lancaster East	Wabash	Greuling—Case I	36-2N-13W	2630 (Pb. 1761)	1745	Bieh	5	12-12-44	1
14. Maple Grove East	Edwards	Texas Co.—C. Lambright I	1-1N-10E	3242	3215	McClosky	133+42	6-6-44	3
15. Mt. Erie North	Wayne	Jablonski—Yorndorf—Ascher I	3-1N-9E	3226	3100	Aux Vases	47	1-25-44	4
16. New Haven North	White	Sohio—Union Cen. Life Ins. I-A	10-7S-10E	2115	2174	Tar Springs	40	8-1-44	2
17. New Haven West	Gallatin	Oil Management—Goforth 2	27-7S-10E	2183	2098	McClosky	184	8-15-44	3
18. Newton	Jasper	Texas Co.—Huddleston I	24-4N-10E	3094	2929	McClosky	39+22	1-2-45	1
19. Olney East	Richland	Texas Co.—Wright I	8-5S-1E	2255	2103	Rosclaire	416	12-19-44	28
20. Roaches North	Jefferson	Texas Co.—Kasban I	33-4N-8E	2718	2690	Cypress	32	8-29-44	1
21. Sailor Springs E.	Clay	Magnolia Pet.—Mary A. Rinnert I	29-1N-3W	2512 (Pb. 974)	953	Cypress	53+2	12-5-44	1
22. Sante Fe	Clinton	Texas Co.—Althoff I	16-4N-13W	2359	2261	McClosky	65	8-22-44	9
23. Summer	Lawrence	Texas Co.—M. D. Smith I	10-5S-14W	3402	3384	Aux Vases	60	8-8-44	3
24. Thackeray	Hamilton	Nat'l Assoc. Pet.—Johnson 2	15-7S-4E	3152	3113	Aux Vases	110+3	12-19-44	1
25. Thompsonville No.	Franklin	Deep Rock—Kirk Tr. I	18-5S-9E	3522	2830	Cypress	192	1-2-45	1
26. Trumbull	White	Lewis—Burkhard I	17-7S-5E	3150	3131	Aux Vases	425	1-2-45	1
27. West End	Hamilton	Sinclair—Wyoming—Russell I	11-5S-2E	2942	2752	Levias	8+5	12-14-43	3
28. Whittington West ^b	Franklin	Murchison—Franklin Co. Coal I	34-7N-10E	2715	2665	McClosky	213	11-28-44	1
29. Willow Hill	Jasper	Pure Oil—Dhom "A" I							
INDIANA									
30. Upton	Posey	Bennett Bros.—Spencer I	37-6S-14W	1026	1003	Tar Springs	86+86	1-20-44	1
31. S. New Harmony	Posey	Sells Pet.—Wade I	14-5S-14W			Hardinsburg	298+15	1-20-44	1
32. S. Owensville	Gibson	Cherry & Kidd—Virginia Baird	25-3S-12W			McClosky	163	3-44	1
33. West Hovey	Posey	Roger-Cartage Co.—Deakin & Lynch I	25-7S-15W			McClosky	55+40	10-7-44	1
34. Decker	Knox	Wm. P. Muller—B. M. McDowell I	30-2N-11W			McClosky	22+30	4-13-44	1
35. Patton	Knox	B. & M. Drig. Co.—Wm. P. Stecker I	8-1S-12W			Bieh	25	6-22-44	1
36. Cato	Pike	H. C. Detrick et al.—Knick I	8-1S-7W			Cypress	18+5	9-14-44	1
KENTUCKY*									
37. East Clay	Webster	Carl Sneff et al Page I	9-L-21	1026	1003	Penn. ss.	125	August	1
38. South Pole	Webster								
39. Waverly	Union	Farmer & Chenault—W. W. Slaton I	17-M-19	1361	1347	Hardinsburg	40	December	1
40. Sturgis	Union	Gulf Ref. Co.—Rankin I	16-Q-20	1850	1811	Waltersburg	79	August	1
41. Powell Lake	Henderson	Nat'l Assoc. Pet.—Rudy I	4-O-23	2251	2246	Cypress	70	September	1
42. Rock Springs	Henderson	Trans. Tex Oil Co.—Culver I	12-P-20	2710 (Pb. 2549)	2523	Levias	13	August	1
43. North Utley	Union								
44. Wannemaker	Henderson								
45. East Pole	Webster	Sohio Oil Co.—Rash Hrs. I	24-O-25	1727	1710	Tar Springs	89	July	1
46. McKinley	Henderson	Shell Oil Co. Inc.—Hamilton I	14-O-27	1833 (Pb. 1848)	2388	Cypress	37	September	1
47. Curdsville	Daviess	Miller & Sharella—Simmons I	20-O-27	2033 (Pb. 1918)	1842	Aux Vases	25	April	1
48. St. Raphael	Daviess								

^a Oil and water.

^b Discovered in 1943; named 2-3-44.

* Names of pools furnished by D. J. Jones, State geologist of Kentucky, personal communication, February 17, 1945; data on discovery wells from *Oil and Gas Journal* (January 27, 1945), p. 223.

data on discovery wells from *Oil and Gas Journal* (January 27, 1945), p. 223.

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TABLE II
SELECTED LIST OF DRY TESTS IN ILLINOIS IN 1944

County	Company	Farm	Location	Total Depth (Feet)	Depth to Top (Feet)	Deepest Formation	Date Completed
1 Bond	Magnolia	L. V. Hunter 1	15-6N-3W	2386	2276	Dutch Creek (Dev.)	11-14-44
2 Bond	Texas	Enloe 1	6-4N-2W	3397	3372	Trenton	5-2-44
3 Bond	Texas	F. M. Miller 1	22-6N-2W	2485	2416	Clear Creek (Dev.)	11-28-44
4 Bond	Union Prod. Pet.	Acconero 1	26-4N-4W	3170			11-28-44
5 Clark	Jansen	Carpenter 1	9-9N-12W	2735	2697	Devonian	6-6-44
6 Clark	Texas	Coldren 1	4-11N-11W	2496	2436	Devonian	10-3-44
7 Clark d	Wright	Hight 1	32-9N-14W	2579	2503	Devonian	10-17-44
8 Clinton	Stanolind	Phillips 1	4-2N-3W	2513	2391	Devonian	2-1-44
9 Clinton	Strickland	Haake 1	32-2N-3W	2602	2498	Devonian	12-10-44
10 Clinton	Texas	Schumacher 1	29-3N-4W	2426	2225	Devonian	5-2-44
11 Douglas	Ohio	Shaw 1	36-16N-8E	4151	4045	Mt. Simon	1- 2-45
12 Fayette	Texas	Sheridan-Stokes 1	7-8N-1E	3663	3607	Onetota	1-11-44
13 Ford	Hemdon	W. J. Fecht 1	33-26N-9E	2237	2075	St. Peter	2- 1-44
14 Greene	Beatrice Creamery	Chicago Cold Storage 1	26-12N-13W	1100	1063	Devonian	5- 2-44
15 Greene	Johnson	Waller 1	12-11N-10W	1100	1001	St. Peter	5-23-44
16 Hamilton	Texas	Davis 14	7-6S-7E	5358	5020	Devonian	12- 5-44
17 Hancock	Hemdon	M. D. Laffey 1	17-3N-7W	3925	2760	Mt. Simon	3-14-44
18 Henderson	Northern Ordnance	Adams 1	28-8N-4W	323			6-27-44
19 Henderson	Northern Ordnance	Bohan 1	18-8N-4W	729	698	Maquoketa	7-18-44
20 Henderson	Northern Ordnance	Covert 1	35-8N-4W	725			8- 1-44
21 Henderson	Northern Ordnance	Likely 1	1-9N-5W	410	405	Maquoketa	8-22-44
22 Henderson	Northern Ordnance	Pendarvis 1	17-9N-4W	446			6-27-44
23 Henderson	Northern Ordnance	Pendarvis 1	23-9N-4W	492			8-22-44
24 Henderson	Northern Ordnance	Tubbs 1	22-9N-4W	390			7-11-44
25 Henderson	Northern Ordnance	Tubbs 2	22-9N-4W	605			8-22-44
26 Henderson	Northern Ordnance	Schenck 1	15-8N-4W	674	667	Maquoketa	12- 5-44
27 Jackson	Magnolia	Proemling-Reuscher 1	11-7S-4W	3382	3421	Trenton	6-27-44
28 Jefferson f	Nash Redwine	V. Laux 1	15-1S-2E	3765	3611	Devonian	6-20-44
29 Kendall	Hemdon	R. Proctor 1	36-36N-8E	2328		Mt. Simon	2- 2-44
30 McDonough	Northern Ordnance	Champion 1	9-6N-3W	642			11- 7-44
31 McDonough	Northern Ordnance	Deems 1	26-7N-4W	760			11-14-44
32 Madison	Magnolia	Plocker 1	10-3N-5W	2897	2876	Plattin	12-10-44
33 Montgomery	Malone	Todd 1	21-11N-4W	632			4- 4-44
34 Montgomery	Texas	Long 1	27-11N-5W	2525	2359	"Trenton"	6-13-44
35 Montgomery	Texas	Springfield Marine Bank 1	32-10N-3W	2714	2636	"Trenton"	5-2- 44
36 Randolph	General Oil and Gas	Schmall 3	27-4S-7W	450			8-22-44
37 Randolph	General Oil and Gas	Schmall 4	27-4S-7W	427			11-28-44
38 Randolph	McHughes	Wilson 1	23-6S-6W	757	635	Aux Vases	4-18-44
39 St. Clair	Braun	Munier 1	27-1S-8W	309	185	Cypress	2-20-44
40 St. Clair	Sinclair-Wyoming	Bear 1	23-2N-6W	2575	2459	"Trenton"	10-24-44
41 St. Clair	Skelly	Schickedanz 1	12-3S-6W	2805	2684	"Trenton"	8-15-44
42 St. Clair	Young	McCurdy 3	32-3S-6W	530	506	Cypress	3-28-44
43 St. Clair	Young	McCurdy 4	29-3S-6W	618	590	Bethel	7-25-44
44 Saline	Brehm	Webb 1	28-8S-6E	3063	2855	Ste. Genevieve	12-19-44
45 Saline	Jarvis and Marcell	R. Raley 1	10-10S-6E	2074	1953	Cypress	1-25-44
46 Saline	Jarvis and Marcell	Sisk 1	15-10S-6E	1520	1498	Waltersburg	3-21-44
47 Saline	Magnolia	Pruett 1	7-9S-6E	2886	2615	Ste. Genevieve	7-11-44
48 Schuyler	Amberg and Miller	Taylor 1	30-1N-1W	630			6-20-44
49 Schuyler	Northern Ordnance	F. B. Greuel 1	7-3N-1W	684	617	Maquoketa	8-15-44
50 Schuyler	Northern Ordnance	E. Payne 1	3-3N-2W	756			10-10-44
51 Schuyler	Northern Ordnance	A. Yaap 1	1-3N-2W	783	664	Devonian	9-12-44
52 Shelby	Luttrell	McAndrew 1	15-10N-6E	2314	2298	St. Louis	10-31-44
53 Shelby	Lynch	Amling 1	20-12N-2E	1666	1558	Ste. Genevieve	6-27-44
54 Shelby	Texas	Noffke 1	31-11N-6E	2182	2070	Ste. Genevieve	3-28-44
55 Shelby	Thorpe	Hosteler 1	33-11N-4E	2034	1888	Ste. Genevieve	7-11-44
56 Union	Nation Oil	Gray 1	2-11S-1E	1949	1730	Ste. Genevieve	2-22-44
57 Washington	Hubbard	Sandheindrich 1	18-2S-5W	952	920	Aux Vases	2- 1-44
58 Washington	Ruwalt	Brinkman 1	14-2S-5W	2475	2290	Devonian	2- 8-44
59 Wayne g	Texas	Draper 1	8-3S-6E	5377	5169	Devonian	6- 6-44
60 Wayne h	Texas	Greathouse 1	27-1N-6E	5200	5186	Clear Creek (Dev.)	11-14-44
61 Will	Livengood	E. L. Herren 1	23-36N-9E	1958	1904	Mt. Simon	11-14-44
62 Williamson	Browning	Hayton 1	32-9S-1E	2060	1958	Ste. Genevieve	12-12-44
63 Williamson	Superior	Pulley et al 1	13-9S-3E	2790	2776	St. Louis	4-18-44

d. Old well deepened. Near Johnson South field.

e. In Dale-Hoodville field.

f. In Dix field.

g. In Mayberry field. Old well deepened, plugged back to McClosky producer.

h. Old well deepened. In Johnsonville field.

Extensions.—Extensions to pools discovered by outpost wells (from $\frac{1}{4}$ mile to 2 miles from production), in Illinois numbered 41 of which 3 were in formations in the Pennsylvanian, 14 in the Chester series, 23 in the Lower Mississippian (all in the Ste. Genevieve formation) and 1 in the Silurian.

The Marine pool, which was discovered in 1943, was extended in 1944 by the addition of 24 producing wells, making a total of 28. It produces oil from a Silurian coral reef. Its 1944 production amounted to 480,000 barrels of oil. The Illinois Geological Survey is making a study of the subsurface geology of the Marine pool.

Exploratory methods and results.—Subsurface geology and the reflection seismograph continue to be the methods most used in the location of exploratory wells. For the 29 pools discovered in 1944, 15 were reported to be discovered by subsurface geology, 7 by geophysics, 3 by a combination of geology and geophysics, 3 non-scientific, and 1 unknown.

The amount of seismograph work in Illinois in 1944 was approximately half that done in 1943. The reason for the decline in the use of the seismograph appears to be that the large structures have already been located and the structures remaining to be discovered are smaller. Numerous structures which produce oil in Illinois are so small as to be near the limits of error of the reflection-seismograph method now in use.

Wildcat drilling.—Wildcat drilling continued at a high rate during 1944, increasing somewhat in the latter part of the year. The number of wildcat wells completed in 1944 was 441 as compared with 462 in 1943, but the number of these located 2 miles or more from production was 266 in 1944 and 243 in 1943, an increase of 23. Counting only the wildcats 2 or more miles from production, the proportion of successful wildcats was 12 per cent in 1943 and 11 per cent in 1944. It is reasonable to expect that one wildcat in 10 will be successful in 1945.

A number of wildcat tests were drilled in the non-producing parts of the Eastern Interior basin in northern and western Illinois north of the Colmar-Plymouth pool (Table II). Some of this drilling was financed by profits from war industries.

Deep testing.—There was less deep testing in Illinois in 1944 than had been anticipated because available drilling equipment was used mainly for pool development drilling of the shallower formations after the well-spacing restrictions were relaxed in April, 1944. No pre-Mississippian pools were discovered.

Five deep tests are of special interest (Table II, Nos. 11, 16, 28, 59, and 60).

The Ohio Oil Company's Shaw well No. 1 (11) near Tuscola is located on top of a large closed dome on the LaSalle anticlinal belt and in an area where the uppermost bedrock is Devonian limestone. It had a total depth of 4,151 feet and reached the top of the Mt. Simon formation in the Cambrian at the depth of 4,045 feet. Oil stains were found in the "Trenton" limestone but no oil showings were found below that.

The other four deep tests are Devonian tests in the Illinois basin, one each in

the Johnsonville (60), Mayberry (59), and Dale-Hoodville (16) pools, and one on the edge of the Dix pool (28). The last named had a showing of oil in the Devonian, but none of the four Devonian tests had any large porous zones comparable with the producing zone in the Salem and Centralia pools.

The Devonian strata in The Texas Company's Draper well No. 1 (Table II, No. 59) in the Mayberry pool, Wayne County, consist of the following.

	<i>Thickness (Feet)</i>	<i>Depth (Feet)</i>
Top, Devonian limestone		5169
Lingle? formation—limestone, cherty, light brownish gray	63	5232
Grand Tower? formation—limestone, white, coarsely crystalline	98	5330
Dutch Creek formation—sandy limestone grading to sandstone	10	5340
Clear Creek formation—limestone, cherty, dolomitic, light brownish gray	37	5377

The lower part of Grand Tower (?) is slightly vesicular and showed slight oil stain. No vesicular dolomite of the type that produces in the Salem pool, probably to be correlated with the Geneva of Indiana, was found in either this well or Nash Redwine's Laux No. 1 in Sec. 15, T. 1 S., R. 2 E., Jefferson County.

INDIANA

The number of wells in Southwestern Indiana in 1944 was 276, about 40 per cent less than the number drilled in 1943, according to data furnished by Ralph E. Esarey, State geologist, Department of Conservation, Indianapolis, Indiana. Of the 276 wells completed, 136 were oil producers, 8 were gas producers and 132 were dry holes.

Drilling was largely concentrated in a few counties in the extreme southwest part of Indiana. Two counties, Gibson and Posey, had 88 well completions each, or a total of 176, which amounted to 64 per cent of the total for southwestern Indiana.

Total production of oil in Indiana in 1944 was 5,118,000 barrels (U. S. Bureau of Mines Monthly Petroleum Statement No. P 258) nearly all of this being from the southwestern part of the state.

In 1944, 62 wildcat wells were completed in southwestern Indiana. Most of these were completed in the Chester series or in the Ste. Genevieve formation (McClosky limestone) of the Lower Mississippian, but a few penetrated the St. Louis limestone, next below the Ste. Genevieve. In Perry County, the Henry Delaisse well No. 1 in the Bristow pool tested the Trenton limestone, top 3,151 feet, total depth 3,255 feet. No tests to the Devonian or deeper were drilled in the Gibson and Posey County area.

WESTERN KENTUCKY

The following statement regarding developments in Kentucky in 1944 was furnished by D. J. Jones, State geologist, Lexington, Kentucky.

As the need for bolstering oil reserves became urgent during the war, a continually increasing number of wildcat wells have been drilled in Kentucky, particularly west of the Cincinnati arch. The results were gratifying, and the new

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pools discovered in the last 3 years have doubled production. In 1944 Kentucky produced slightly more than 9,500,000 barrels of oil, an all-time record. A large percentage of this increase came from western Kentucky.

Development in the western Kentucky coal basin, the southern extension of the Illinois basin, has resulted in the discovery of twelve new fields. Incomplete records of drilling show that approximately 700 tests were drilled during the year in that part of the state, involving twenty-five counties west of the Cincinnati arch, of which slightly more than half were producers. This means that the rate of drilling has been increased three-fold over that of 1942.

Producing formations ranged from the Pennsylvanian to the McClosky of the Lower Mississippian. Fifteen unsuccessful Devonian tests were drilled. There were no Knox dolomite tests.

A summary of drilling operations reveals that out of a total initial production of 48,000 barrels, 37,500 barrels were produced from the Waltersburg, Tar Springs and the Cypress of the Chester and 8,500 from the McClosky. The Pennsylvanian and the Hardinsburg, Jackson, Bethel, and Cunningham of the Chester accounted for the remainder.

Daily production for the month of December, 1944, averaged approximately 29,000 barrels as against less than 21,000 barrels for December, 1943. In anticipation of the discovery of the usual number of new pools in western Kentucky, it is expected that the 1945 production will exceed that of 1944.

OUTLOOK FOR 1945

The rate of drilling in the Eastern Interior basin is expected to continue about the same in 1945 as in 1944 with probably an increase in the number of wildcat tests. The high demand for oil for both military and civilian uses will continue to stimulate oil production by all possible means, including exploratory and pool-development drilling and secondary-recovery methods.

Increased costs of drilling and shortage of equipment and manpower are factors which limit the rate of drilling development. Since May 21, 1941, the price of crude oil has been frozen but since that time drilling and production costs have risen sharply. The price premium for stripper well production is of some help but it does not meet the situation.

Geological data from thousands of wells in the Eastern Interior basin reveal a different picture of the oil reservoirs from that available 2 or 3 years ago. Production is from many small lenticular reservoirs and many producing structures are so small as to be near the limits of error of the reflection seismograph. This means that aside from the possibility of pre-Mississippian production in the basin, wildcat drilling from Mississippian and Pennsylvanian sands will continue in the Eastern Interior basin for many years and that many more pools, extensions, and new producing formations remain to be discovered and developed. This and the expansion of secondary recovery of oil promise well for the future of the oil industry in this region.