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ILLINOIS STATE GEOLOGICAL SURVEY

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PETROLEUM IN ILLINOIS IN 1911

BY RAYMOND S. BLATCHLEY, Geologist.

THE YEAR'S PRODUCTION.

Illinois suffered a decrease in oil production in 1911; the estimated output being 30,000,000 bbls. as compared to 33,143,362 in 1910. The following table covers the years from 1905 to 1911:

*Illinois oil production to 1911.**

	Bbls.	Value.
Previous.....	6,576	
1905.....	181,084	\$ 116,561
1906.....	4,397,050	3,274,818
1907.....	24,281,973	16,432,947
1908.....	33,685,238	22,649,561
1909.....	30,898,339	19,788,864
1910.....	33,143,362	19,669,383
1911 (est'd)....	30,000,000	19,500,000
	156,594,622	\$101,432,134

*Figures, except 1911, by Dr. L. David T. Day, U. S. Geological Survey.

The decline in 1911 is the second in the brief history of the oil business in Illinois. The first came in 1909 and was due to disturbed market conditions. Recovery was prompt in 1910; but in 1911 continued decline of the early fields and the lack of new development in the later pools caused a second reversal. Unless new fields are discovered the decline must continue. The basis of estimating the production, since only eleven months' returns are available, is to assume that the December runs of the Ohio Oil Company and of the Tidewater Pipe-line Company will be equivalent to those of November; and that the tank-car shipments will reach about 3,000,000 bbls. as compared with 3,070,925 bbls., according to Day, for 1910. The tank-car shipments in the Illinois fields are those of the Sun Oil Company, Cornplanter Refining Company, The Missouri-Illinois Oil Company, and of various companies shipping from Sandoval and Carle. The following table gives the pipe-line runs and stocks of the Ohio Oil Company and of the Tidewater Pipe-line Company by months, according to the *Oil City Derrick*:

Production for 1911, in barrels.

	Runs		Stocks	
	Ohio Oil Company	Tidewater Pipe-line Company	Ohio Oil Company	Tidewater Pipe-line Company
January.....	2,169,879	124,783	26,243,015	3,860,578
February.....	1,994,231	113,489	25,635,245	3,998,278
March.....	2,589,635	124,746	23,997,496	3,941,079
April.....	2,173,939	117,003	24,005,010	3,141,490
May.....	2,299,881	139,925	24,129,388	3,195,449
June.....	2,208,358	132,833	23,195,749	3,744,088
July.....	2,292,927	131,641	22,714,183	4,076,403
August.....	2,340,877	126,921	22,265,928	3,986,160
September.....	2,179,591	114,807	21,824,719	3,558,641
October.....	2,195,408	114,752	21,359,482	2,444,909
November.....	1,996,321	109,719	20,211,934	

The prices for the two general grades of oil remained steady from the previous year until May 2, 1911. Until this time oil of gravity over 30° B. commanded 60 cents per bbl., and under 30° B., 52 cents per bbl. The price increased in May for the two grades to 63 and 55 cents per bbl. A second increase for the first grade to 65 cents per bbl. took place June 14, 1911. A third increase of the first and second grades to 67 and 57 cents took place on September 15 and 19 respectively, and these prices prevail at the present time. Little oil under 30° B. is marketed in Illinois. It is used mostly as fuel.

THE SOUTHERN ILLINOIS OIL FIELDS.

Clark County: The Clark County and adjoining shallow-oil areas have shown little development. There was a continued decrease in production from 1910. The combined daily output of the Clark, Cumberland, and Edgar county wells was about 8,000 bbls., as against 9,000 bbls. in 1910.

Crawford County: Crawford County showed the first evidence of a rapid decline in 1910. No new additions to the field were developed and inside drilling failed to prevent decrease of production in 1911. The average daily output was about 18,000 bbls., as against 30,000 bbls. in 1910, and 100,000 bbls. in 1907.

Lawrence County: Lawrence County is the richest producing area in the State. There are seven sands from 750 to 1900 feet deep, that yield steadily. In order they are: the Bridgeport No. 1, 2, and 3 lenses, 750 to 1000 feet; the Buchanan, 1100 to 1400 feet; the Kirkwood, 1350 to 1650 feet; the Tracey, 1550 to 1750 feet; and the McClosky, 1750 to 1900 feet. The Kirkwood and McClosky sands, especially the latter, are the richest developed in Illinois. Their accumulation of oil and gas is governed by a long double-plunging anticline. Lawrence County maintained its usual production of about 42,000 bbls., without new additions to the field. Both "sour" and "sweet" oils were produced, and handled separately.

SOUTHERN-CENTRAL AND WESTERN ILLINOIS.

Marion County: The Sandoval field of Marion County in 1911, was clearly defined and found limited to about three-fourths of a square mile. There are about 66 producing wells that have a daily yield of 1800 bbls. The oil comes from the Stein and Benoist sands, which occur in the basal portion of the Chester rocks of the Mississippian formations and are equivalent to the Kirkwood sand of Lawrence County. The Sandoval field lies along an irregular structural terrace upon the broad and gentle western flank of the Illinois basin.

Clinton County: The best new field for the year east of the Mississippi was opened 3 miles northwest of Carlyle in April. The area was described and recommended by the State Geological Survey* previous to the discovery. The oil comes from a sand in the bottom part of the Chester rocks and is considered the equivalent of the Benoist sand of Sandoval and the Kirkwood sand of Lawrence County. The field is governed by an elongated dome on the western flank of the Illinois basin and has an areal extent of about 1½ square miles. The gravity of the oil is about 35° B. There are about 120 wells yielding about 4500 bbls. daily.

The production of the first Carlyle wells was about 200 bbls. This caused great excitement in the oil trade, with the result that enormous bonuses were paid for leases many miles from producing territory. The field proved to be very limited and a great amount of money was lost.

Morgan County: Several very light gas wells and one 5-bbl. oil well were drilled about 6 miles east of Jacksonville. The quantities of gas are not of much commercial value.

Macoupin County: Two gas wells with about 100,000 cubic feet daily yield, and two oil wells of 5 and 10 bbls. production were completed about 3 miles south of Carlinville. The production comes from the base of the Pottsville rocks, immediately overlying the massive St. Louis limestone, and according to F. H. Kay of the Survey, seems due to a small elongated dome in the rocks.

Perry County: The Midvalley Oil Company of St. Louis found a showing of oil in their prospect 4 miles east of Pinckneyville late in November. A conspicuous north and south anticline between Duquoin and Pinckneyville had previously been pointed out by the State Geological Survey. Much drilling is contemplated along this area.

*Blatchley, R. S., Ill. State Geol. Survey, Bull. No. 16, pp. 87 and 167.

SUMMARY TABLES.

The following tables compiled from the *Oil City Derrick* and the *Oil and Gas Journal* show the development in Illinois during 1911:

Wells drilled in Illinois in 1911.

	Completed.	New production. Bbls.	Dry holes.	Average initial production. Bbls.	Abandoned wells.
January.....	104	5,677	22	69	12
February.....	89	3,512	25	55	10
March.....	71	3,909	15	69	1
April.....	81	5,587	16	86	12
May.....	117	5,132	33	61	9
June.....	147	5,850	43	56	81
July.....	127	9,058	26	90	8
August.....	146	7,578	27	63	14
September.....	138	6,576	38	66	17
October.....	107	4,782	17	53	15
November.....	129	5,826	25	56	15
	1,256	63,487	287	66	194

The Carlyle development in April and July caused the average initial production to exceed that of any month in the two last years.

*Well drilled by counties during 1911.**

County.	Wells completed.	New production. bbls.	Dry holes.
Lawrence.....	479	38,692	52
Crawford.....	449	9,258	106
Clark.....	60	728	26
Cumberland.....	12	115	6
Marion.....	53	3,925	11
Clinton.....	152	10,726	44
Miscellaneous.....	51	43	42
	1,256	63,487	287

*Eleven months.

On January 1, 1911, it was estimated that 18,618 wells had been drilled in Illinois. Of these, 2,847 or 15.2 per cent were barren. In the first eleven months of 1911, 1,256 wells were drilled, with 287 or 22.8 per cent barren. The total up to December 1, 1911, was 19,874 wells drilled with 3,134 or 15.7 per cent barren.

Six-year comparison.

Year.	Wells completed.	Producing wells.	Initial output. Bbls.	Dry wells.	Average yield per well. Bbls.	Total production. Bbls.
1906.....	3,283	2,793	113,012	490	40.4	4,397,050
1907.....	4,988	4,260	139,163	728	32.6	24,281,973
1908.....	3,574	3,019	78,960	555	26.1	33,686,238
1909.....	3,151	2,593	89,756	558*	34.0	30,898,339
1910.....	2,139	1,671	93,256	468	55.8	33,143,362
1911**.....	1,256	969	63,487	287	66.0	30,000,000

*70 gas wells included.

**Eleven months.