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DEPARTMENT OF REGISTRATION AND EDUCATION



MINERAL PRODUCTION IN ILLINOIS IN 1964

W. L. Busch

ILLINOIS STATE GEOLOGICAL SURVEY
John C. Frye, *Chief* URBANA
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ABSTRACT

The value of minerals produced in Illinois in 1964 amounted to 618 million dollars. This total was the second highest annual value ever recorded for mineral production in this state. Illinois minerals include coal, oil, stone, sand and gravel, fluorspar, lead, zinc, and other items such as clay products, cement, and lime. The total annual value of these minerals has been in excess of 600 million dollars for each year, 1956-1964. The quantity and value of minerals produced in 1964 are summarized in the tables and maps of this report.

SUMMARY OF 1964 MINERAL PRODUCTION

Illinois mineral production in 1964 was valued at 618 million dollars. This amount was the second highest total annual value ever recorded for mineral production in this state. The record high value of 631 million dollars was established in 1962. Although the total mineral value for 1964 was only slightly greater than the 615 million dollars worth of minerals reported for 1963, several of the major mineral commodities produced in 1964 showed a substantial increase over the corresponding 1963 values. These mineral products include coal, stone, cement, lime, common sand, and gravel. However, the values of oil, clay products, special sands, fluorspar, and metals all showed declines in 1964 from their 1963 values (tables 1 and 2).

The value of fuels produced in Illinois during 1964 amounted to about 67.1 percent of the value of all minerals. A decrease in the total value of these fuels—coal and crude oil and associated products—as compared to the 1963 value, amounted to about 5.3 million dollars. The decline in the value of oil, with associated products, amounted to about 16.9 million dollars in 1964. However, the increase in the value of coal produced in 1964 amounted to about 11.6 million dollars. For the year 1964, coal contributed about 33.6 percent of the state's total mineral value, and oil, with associated products, supplied about 33.5 percent of the Illinois overall mineral value.

Stone products produced in Illinois include crushed stone, cement, and lime and make up the second most important group of minerals produced in this state. The tonnage and total value of crushed stone reported produced by commercial operators during 1964 showed an increase of 7.6 percent and 9.5 percent respectively over the tonnage and value reported for 1963. Shipments of Portland and masonry cements increased in value in 1964 about 6.9 percent; the 1964 total value of lime amounted to an 11.1 percent increase over the 1963 value. As a group, these stone products—crushed stone, cement, and lime—contributed 16.4 percent of the state's total mineral value for 1964.

Illinois clay products, which includes such items as face brick and common brick, structural tile, drain and sewer tile, refractories, and pottery and whiteware, had a total reported value of 51.3 million dollars in 1964. This amount was about 4.8 percent less than the 53.9 million dollars worth of clay products reported for 1963. However, the 1964 production of clay products amounted to 8.3 percent of the state's overall mineral products value.

Common sand and gravel production in 1964 showed increases in total tonnage, total value, and average value per ton. The total value of special sands in Illinois in 1964 was almost the same as the 1963 value, which was 11.4 million dollars. Special sands include silica sand and natural bonded molding sand. In 1964 all sands and gravel furnished about 6.5 percent of the total Illinois mineral product value.

Fluorspar, lead, and zinc, which are produced from Illinois mines, had a combined value of about 10.7 million dollars in 1964. This amount was somewhat less than the 1963 total value of 11.8 million dollars. Although shipments of fluorspar in 1964 were slightly below the 1963 shipments, a small increase in the price per ton in 1964 brought the total value of this commodity up to nearly the same dollar value as the 1963 total. Sharp reductions in the tonnage output of lead and zinc in 1964 caused the total value of these metals to be considerably less than the 1963 value although an increase in the price per ton for each metal occurred during 1964. As a group, the total value of fluorspar, lead, and zinc was about 1.7 percent of the state's entire mineral value (tables 3 and 4).

COAL

Illinois coal production in 1964 amounted to more than 54.8 million tons and was valued at 207.8 million dollars. This tonnage output and total dollar value had not been equaled or exceeded since the year 1951 when coal production was about 35 thousand tons more than the 1964 production. The total value of the 1951 production amounted to about 223.3 million dollars, due not only to slightly more tonnage but also to a higher average value per ton as compared to the average value per ton in 1964. However, in 1951 there were 302 mines reporting coal production in 43 of the state's counties, but only 108 mines produced coal in 32 counties in 1964.

During 21 of the 35 years from 1930-1964 inclusive, the annual value of coal was the largest single value, among all minerals produced in Illinois. Coal was first in value for nine years, 1930-1938 inclusive, and for 11 years, 1943-1953 inclusive. In 1964 the value of coal was again the largest single amount among the values of all Illinois minerals and contributed about 33.6 percent to the state's total mineral value. For other years during the 35 year period, the value of oil held the dominant position.

Production

The record for Illinois coal production in 1964 is shown in tables 5 and 6. Table 5 summarizes production in terms of tons of coal produced, type of mine (strip or underground), number of mines, and the approximate value of the product for each producing county. Of the 32 counties reporting coal production for 1964, there were 13 that produced more than one million tons each for a combined total of 90 percent of the state's output. Recovery of coal by stripping methods was important in 18 of the producing counties in 1964 and accounted for about 54 percent of the total coal produced during the year.

The cumulative production of coal by counties since 1882, when mining records were begun, is shown in table 6. During this period of 83 years, more than 3.8 billion tons of coal have been taken from Illinois mines. Of the 71 counties that have recorded coal production since 1882, there are 12 that have produced more than 100 million tons of coal each, and as a group have accounted for 78 percent of the state's entire output. Table 6 also shows the total number of years that each county has produced coal since 1882 and the most recent year it was productive.

The 32 Illinois counties that produced coal in 1964 are indicated by the county map in figure 1, with the intensity of mining activity illustrated by the degree of shading.

PETROLEUM

Production of crude oil in Illinois for 1964 was estimated at 70,168,000 barrels, about a six percent decline from the 74,796,000 barrels produced in 1963. Peak production for Illinois oil occurred in 1940 when 147,647,000 barrels was produced after which production gradually declined to a low of about 59 million barrels in 1953. In 1954, through a combination of increased drilling and secondary recovery methods, the downward trend was reversed and production increased to the 1956 postwar high of 82.3 million barrels. Since 1956 oil production in Illinois has recorded an uneven decline to the 1964 production of just over 70 million barrels.

The value of crude oil produced in Illinois during 1964 amounted to about 205.6 million dollars. An estimated decrease of three cents per barrel in the average price and lower production made the value of Illinois oil, with natural gas and natural gas liquids, about 16.9 million dollars less than the 1963 total value. However, these products supplied about 33.5 percent of the state's total mineral value in 1964.

Production

The estimated amount and value of oil produced by county in 1964 and each county's percentage of the state total are given in table 7. This table also indicates the total estimated oil production for each county for the period 1888 through 1964. The map in figure 2 shows the 41 Illinois counties that produced oil in 1964 and indicates the major oil-producing areas.

Illinois oil production records, from 1930-1964 inclusive, show that the annual value of oil was less than the annual value of Illinois coal until the year 1939. During the four year period, 1939-1942, the annual value of oil was greater than the value of coal. Not until 1954 did the annual value of oil again exceed the value of coal. From 1954 through 1963, the value of oil for each year was more than the value of coal. However, in 1964 the value of coal produced in Illinois exceeded, by a small margin, the value of oil for that year.

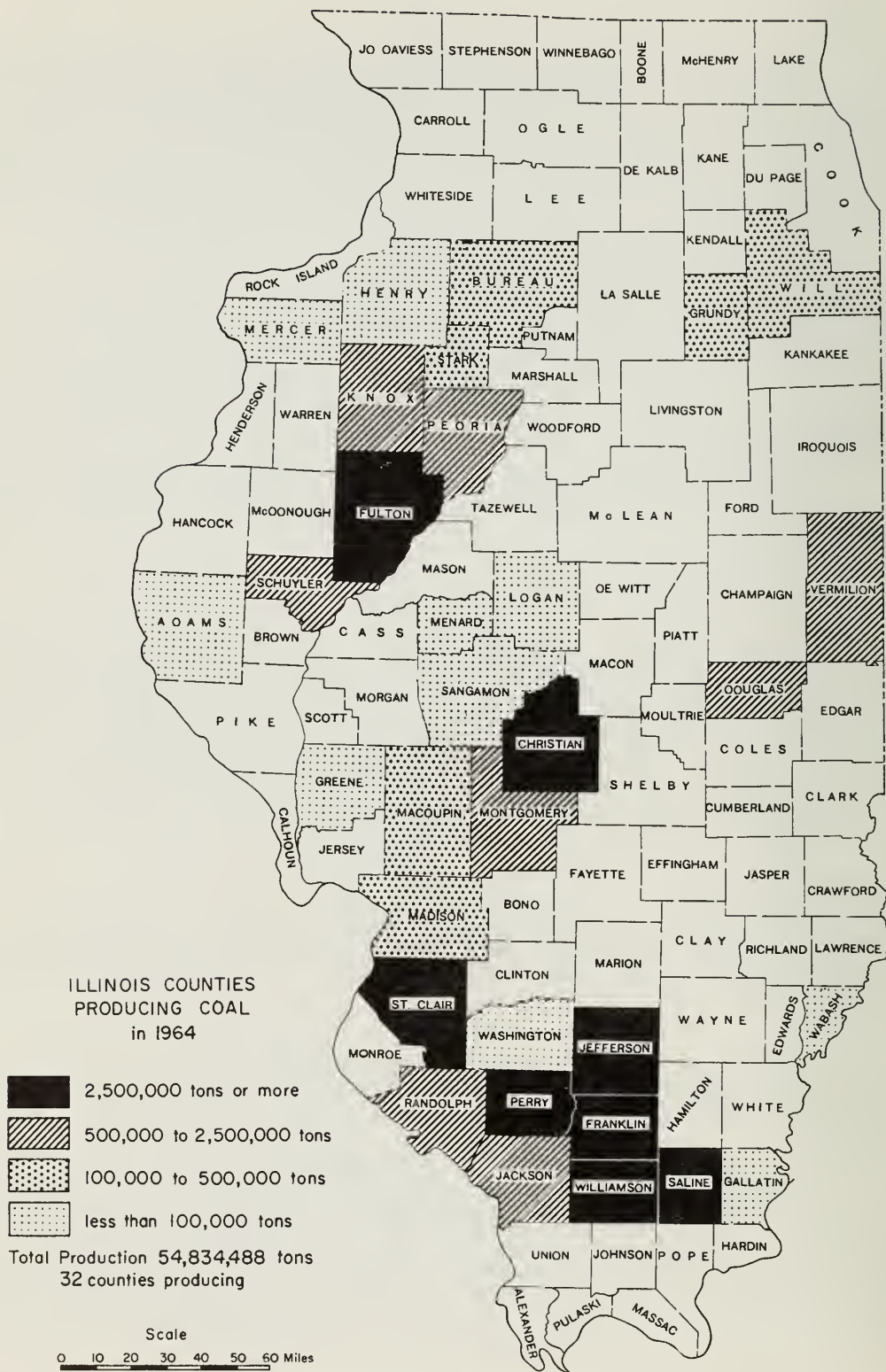


Figure 1 - Illinois coal production by counties in 1964.

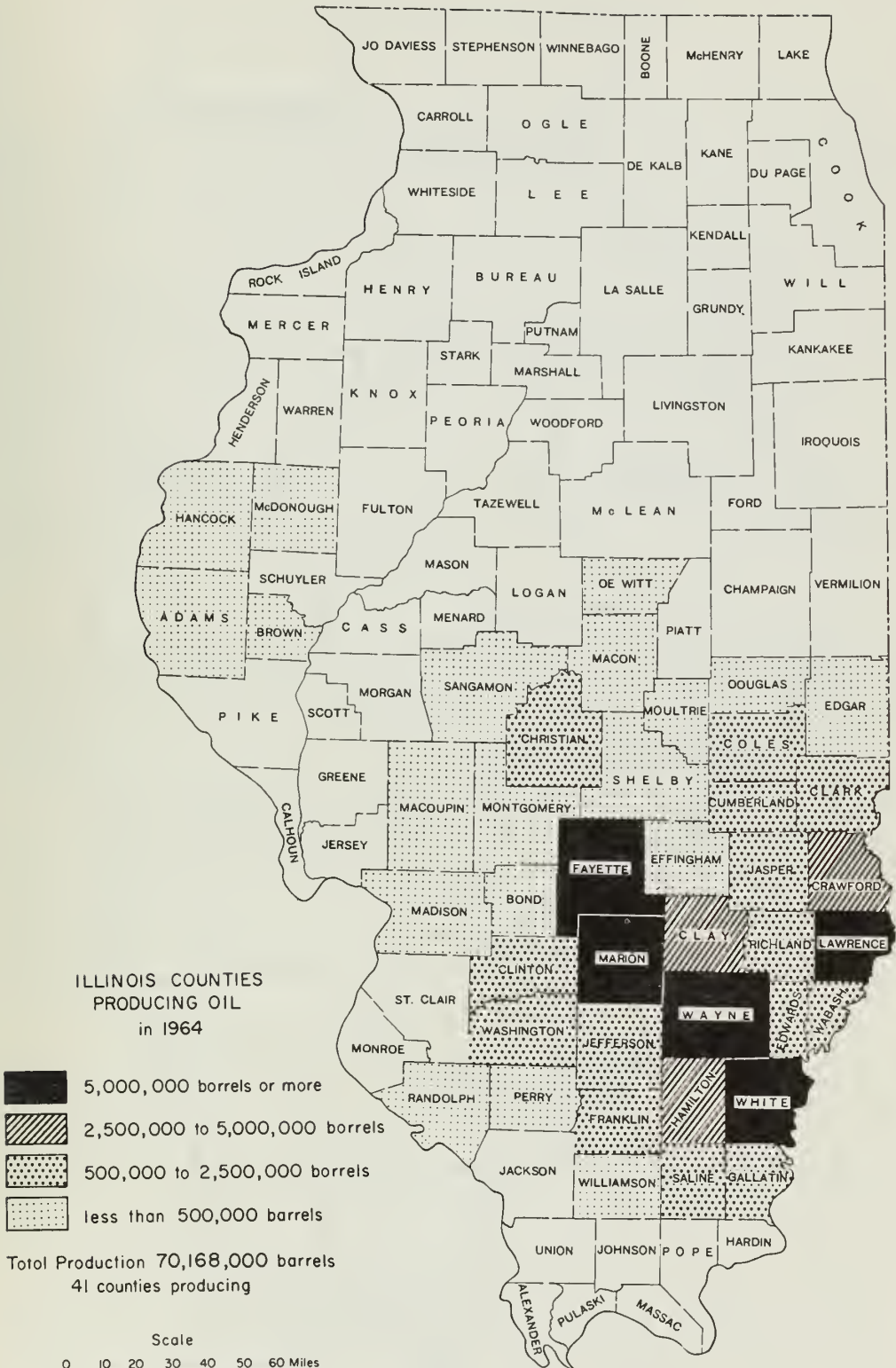


Figure 2 - Illinois oil production by counties in 1964.

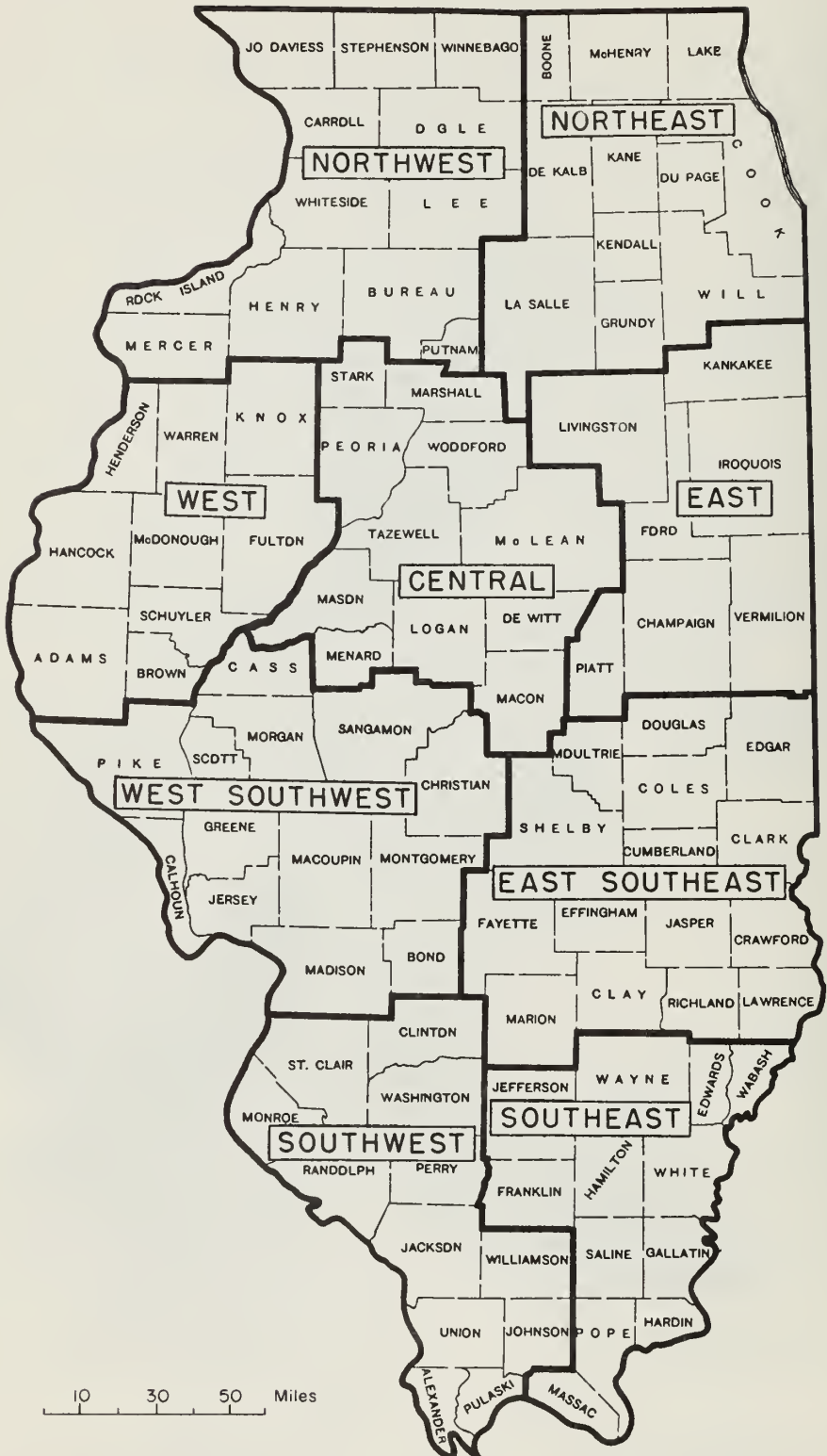


Figure 3 - County outline map of Illinois showing area division.

STONE, SAND, AND GRAVEL

Stone

Commercial quarry operators produced 38.6 million tons of crushed and broken stone in 1964, which was valued at 52.2 million dollars. The tonnage reported for 1964 was about 7.6 percent more than the 35.8 million tons reported for 1963. Greater stone production in 1964, plus a two-cent advance in the average value per ton, increased the total value of this product by 9.5 percent over the 1963 value of 47.7 million dollars. During 1964 seven Illinois counties—Cook, St. Clair, Kankakee, Will, Livingston, Rock Island, and Randolph—produced over one million tons of stone each for a combined total of 21.8 million tons, or 56 percent of the state's total stone production. In addition to the counties named above, there were ten counties with stone production ranging from one-half million to one million tons each for a combined total production of about 7.3 million tons of stone. This amount was about 19 percent of all stone produced in Illinois during 1964.

Table 8 gives a detailed accounting of stone production in Illinois according to region (fig. 3) and according to three major categories of use—stone for road and building, agriculture, and all other uses. Table 8 also lists every county reported to have had stone production and the average value at the quarry for all categories of stone in all regions for 1964.

Sand and Gravel

The production of common sand and gravel in Illinois during 1964 increased in total tons produced, in total value of product, and in the average price per ton for each commodity over the corresponding figures for 1963 (table 1). In 1964 the combined production of common sand and gravel amounted to 30.2 million tons as compared to a total of 27.1 million tons for 1963. The total value of these commodities was 28.5 million dollars for 1964 and 24.8 million dollars for 1963.

Common sand and gravel are used extensively in Illinois in the construction industry, in building and maintaining highway and railway roadbeds, and for many other uses. According to the production figures tabulated in table 9 (sand) and in table 10 (gravel), the Northeast Region of Illinois was the number one producer of these combined products in 1964 (fig. 3). The second most important region in the production of sand and gravel in 1964 was the Central Region, followed closely by the Northwest Region. Other regions in Illinois produced smaller, but important, tonnages of these materials during 1964.

Special Sands

Silica sand and natural bonded molding sand are the two special sands produced in Illinois. During 1964 silica sand was produced in substantial quantities in LaSalle County and in lesser amounts in Ogle County. According to the 1964 production figures shown in table 11, the most important single use for Illinois silica sand was in the manufacture of glass. The second most important use for the state's silica sand was for molding sand purposes. The footnotes of table 11 enumerate other uses for Illinois silica sand that require both ground and unground materials.

Natural bonded molding sand has been produced in relatively small quantities in Illinois for many years. The natural makeup of this sand is such that it can be used in molds for the casting of metals without the addition of a binding substance, such as clay, because the sand already contains the proportion of fine clay to make it suitable for molding use. Table 11 indicates that the production

of natural bonded molding sand in 1964 was about one-half the amount that was produced during 1963. In 1964 small amounts of natural bonded molding sand was produced in Henry, Fayette, Mason, and Rock Island Counties.

CLAY PRODUCTS

The value of clay products reported produced in Illinois during 1964 amounted to 51.3 million dollars. Although this total was about 4.8 percent less than the 53.9 million dollars worth of clay products reported for the year 1963, the 1964 figure represents about 8.3 percent of the state's overall mineral products value. Illinois clay products include such items as face brick and common brick, sewer pipe and drain tile, building tile, vitreous plumbing fixtures, electrical porcelains, pottery and whiteware, and lightweight aggregates. Also included in the list of Illinois clay products are the various forms of special heat-resistant fire brick and silica brick used by the metallurgical industries. A summary of the production of clay products for the years 1963 and 1964 is given in table 12. Fifty-one clay products plants located in 26 counties throughout Illinois reported production for 1964.

CEMENT

The production of cement in Illinois represents one of the larger mineral industries of this state. During 1964 the total value of this product, including Portland and masonry cements, amounted to more than 34.2 million dollars. This amount was an increase of 2.2 million dollars, or 6.9 percent, over the 32.0 million dollars worth of cement produced in 1963. Three counties contain the state's four cement plants: two in LaSalle County at Oglesby and at LaSalle; one in Lee County at Dixon; and one in Massac County at Joppa. Illinois cement plants shipped a total of over 10.3 million barrels of all types of cement in 1964 as compared to a total of 9.7 million barrels in 1963 (table 1).

FLUORSPAR

Illinois fluorspar producers shipped a total of 127,454 tons of finished fluorspar in 1964, which was about 58.7 percent of all finished fluorspar produced and shipped in the United States. Illinois, the nation's leading fluorspar producer, supplied about 14.2 percent of all fluorspar—about 900,000 tons of domestic and foreign material—consumed in the United States during 1964 (table 13).

Fluorspar, an important raw material for the iron and steel, aluminum, chemical, glass, and ceramics industries, was mined principally in Hardin County, with small amounts produced in Pope County, in the southern part of the state.

METALS

Zinc and lead are produced in Illinois from primary metal mines in Jo Daviess County, located in the northwestern part of the state, and as by-products of fluorspar mining in Hardin and Pope Counties in the southern part of Illinois.

Production figures for 1964 show that Illinois mines produced a total of 13,800 tons of zinc in 1964, which was valued at 3.7 million dollars. Illinois lead production amounted to 2,180 tons, with a value of \$571,160 for 1964 (table 14).

TABLE 1 - SUMMARY OF ILLINOIS MINERAL PRODUCTION, 1963-1964^a

Material	Unit	1963 ^b		1964 ^b			
		Quantity	Value at plants		Quantity	Value at plants	
			Total	Average		Total	Average
Coal - bituminous	tons	51,642,431	\$ 196,241,238	\$ 3.80	54,834,488	\$207,822,710	\$ 3.79
Crude oil	bbls.	74,796,000	221,396,160	2.96	70,168,000	205,592,240	2.93
Limestone and dolomite	tons	35,887,632	47,754,695	1.33	38,625,836	52,280,405	1.35
Cement - Portland	376 lb.	9,281,110	30,576,701	3.29	9,790,486	32,190,940	3.29
Cement - Masonry	280 lb.	471,566	1,440,172	3.05	595,996	2,038,280	3.42
Clay products	-	-	53,921,080	-	-	51,352,545	-
Sand	tons	12,556,556	10,698,382	0.85	13,681,000	11,864,000	0.87
Gravel	tons	14,558,143	14,099,915	0.97	16,567,000	16,716,000	1.01
Special sands	-	-	11,414,907	-	-	11,355,900	-
Fluorspar	tons	132,060	6,547,149	49.58	127,454	6,451,755	50.62
Zinc	tons	20,337	4,677,510	230.00	13,800	3,753,600	272.00
Lead	tons	2,901	626,616	216.00	2,180	571,160	262.00
Other materials ^c	-	-	15,605,475	-	-	16,010,465	-
Total value			\$615,000,000			\$618,000,000	

^a Table based on figures from the U. S. Bureau of Mines, the Illinois State Department of Mines and Minerals, and the Illinois State Geological Survey.

^b Subject to revision.

^c Includes natural gas, natural gas liquids, and lime.

TABLE 2 - VALUE OF ILLINOIS MINERAL PRODUCTION, 1946-1963
(thousands of dollars)

Year	Mineral production	Year	Mineral production	Year	Mineral production
1946	\$379,673	1952	\$500,820	1958	\$611,625
1947	458,737	1953	501,926	1959	606,300
1948	567,624	1954	519,242	1960	615,800
1949	487,808	1955	570,653	1961	604,000
1950	539,236	1956	613,364	1962	631,000
1951	542,031	1957	612,755	1963	615,000

TABLE 3 - PERCENTAGE OF TOTAL VALUE CONTRIBUTED BY VARIOUS SEGMENTS OF THE ILLINOIS MINERAL INDUSTRY, 1945-1963

Year	Coal	Petroleum products	Stone products	Clay products	Sand and gravel	Fluorspar and metals	Total percent
1945	49.9	33.3	6.2	5.7	2.7	2.2	100
1947	46.9	32.9	7.7	7.4	3.1	2.0	100
1949	39.4	38.7	8.6	7.8	3.4	2.1	100
1951	41.2	32.6	9.2	9.9	3.7	3.4	100
1953	36.2	36.7	11.4	9.2	4.0	2.5	100
1955	29.3	42.7	11.3	9.6	4.5	2.6	100
1957	30.5	40.1	12.3	9.9	4.8	2.4	100
1959	30.4	38.7	13.7	9.6	5.5	2.1	100
1961	29.2	39.1	14.5	9.3	5.8	2.1	100
1963	31.9	36.3	15.2	8.8	5.9	1.9	100

TABLE 4 - AVERAGE PRICES OF ILLINOIS MINERAL PRODUCTS, 1955-1963

Year	Coal (ton)	Crude oil (bbl.)	Crushed stone (ton)	Cement (bbl.)	Lime (ton)	Silica sand (ton)
1955	\$ 3.66	\$ 2.93	\$ 1.22	\$ 2.66	\$ 14.62	\$ 2.84
1957	4.00	3.13	1.38	3.07	16.57	3.11
1959	4.06	3.00	1.31	3.20	16.30	2.91
1961	3.91	3.00	1.37	3.28	16.31	3.20
1963	3.80	2.96	1.33	3.28	16.51	3.15

Year	Sand (ton)	Gravel (ton)	Fluorspar (ton)	Zinc (ton)	Lead (ton)	Silver (ounce)
1955	\$ 0.77	\$ 0.85	\$ 47.12	\$246.00	\$298.00	\$ 0.905
1957	0.77	0.86	51.94	232.00	286.00	No
1959	0.90	0.91	52.53	230.00	230.00	production
1961	0.88	0.89	50.95	230.00	206.00	reported
1963	0.85	0.97	49.58	230.00	216.00	

TABLE 5 - ILLINOIS COAL PRODUCTION BY COUNTIES IN 1964^a

County	Number of mines	Tons mined		Total tons	Total value ^b
		Underground	Strip		
Adams	1	—	28,109	28,109	\$ 106,533
Bureau	1	—	258,932	258,932	981,352
Christian	1	5,451,697	—	5,451,697	20,661,932
Douglas	1	581,246	—	581,246	2,202,922
Franklin	3	5,908,612	—	5,908,612	22,393,640
Fulton	13	—	8,389,797	8,389,797	31,797,331
Gallatin	3	53,832	6,087	59,919	227,093
Greene	1	—	3,102	3,102	11,757
Henry	1	70,504	—	70,504	267,210
Jackson	6	138,032	1,254,133	1,392,165	5,276,305
Jefferson	2	2,517,491	1,159	2,518,650	9,545,684
Kankakee	1	—	827,985	827,985 ^c	3,138,063
Knox	1	—	904,360	904,360	3,427,524
Logan	1	21,899	—	21,899	82,997
Macoupin	1	373,937	—	373,937	1,417,221
Madison	2	126,822	—	126,822	480,655
Menard	1	7,350	—	7,350	27,857
Mercer	2	50,189	1,462	51,651	195,757
Montgomery	2	2,070,058	—	2,070,058	7,845,520
Peoria	6	13,969	1,123,331	1,137,300	4,310,367
Perry	3	—	4,051,589	4,051,589	15,355,522
Randolph	3	831,885	1,537,169	2,369,054	8,978,715
St. Clair	7	1,499,333	4,304,263	5,803,596	21,995,629
Saline	14	1,305,777	2,518,494	3,824,271	14,493,987
Sangamon	1	70,244	—	70,244	266,225
Schuyler	1	—	566,885	566,885	2,148,494
Stark	1	—	444,795	444,795	1,685,773
Vermilion	6	50,408	1,066,248	1,116,656	4,232,126
Wabash	1	—	1,103	1,103	4,181
Washington	1	28,295	—	28,295	107,238
Williamson	20	3,706,771	2,667,134	6,373,905	24,157,100
Total	108	24,878,351	29,956,137	54,834,488	\$207,822,710

- ^a Source: Production figures, Illinois State Department of Mines and Minerals.
^b Average value for Illinois coal f.o.b. mine, estimated at \$3.79 per ton, 1964.
^c Includes 341,157 tons mined in Grundy County and 486,828 tons mined in Will County.

TABLE 6 - COAL PRODUCTION BY ILLINOIS COUNTIES, 1882-1964^a

County	Total production (tons)	Total years active	Last year active	County	Total production (tons)	Total years active	Last year active
Adams	261,281	21	1964	Marshall	12,516,141	70	1951
Bond	7,355,569	57	1942	Menard	13,456,650	83	1964
Brown	65,347	40	1963	Mercer	15,283,208	77	1964
Bureau	53,823,055	80	1964	Monroe	8,284	13	1941
Calhoun	96,247	27	1912	Montgomery	101,260,133	83	1964
Cass	212,477	53	1941	Morgan	190,787	64	1951
Christian	259,829,612	80	1964	Moultrie	2,032,236	16	1924
Clark	4,482	2	1955	Peoria	72,314,733	83	1964
Clay	801	1	1963	Perry	193,405,508	83	1964
Clinton	38,656,325	79	1960	Pike	5,081	8	1942
Coles	198,932	6	1888	Pope	1,562	11	1938
Crawford	45,400	16	1961	Putnam	10,071,893	29	1938
Douglas	5,970,846	19	1964	Randolph	86,430,515	83	1964
Edgar	915,698	41	1952	Richland	154	1	1890
Effingham	796	1	1890	Rock Island	3,846,169	67	1948
Franklin	514,490,084	66	1964	St. Clair	270,398,568	83	1964
Fulton	230,085,079	83	1964	Saline	216,943,719	83	1964
Gallatin	5,953,078	80	1964	Sangamon	233,449,607	83	1964
Greene	684,217	81	1964	Schuyler	7,105,552	82	1964
Grundy	41,926,511	81	1964	Scott	612,476	61	1942
Hamilton	22,097	16	1905	Shelby	4,119,763	67	1950
Hancock	771,281	72	1958	Stark	3,243,855	74	1964
Hardin	40	1	1890	Tazewell	17,633,802	75	1956
Henry	22,893,322	83	1964	Vermilion	160,830,526	83	1964
Jackson	94,158,252	83	1964	Wabash	198,226	36	1964
Jasper	23,739	11	1939	Warren	685,466	73	1954
Jefferson	38,815,938	61	1964	Washington	18,025,969	83	1964
Jersey	120,350	59	1951	White	1,676,741	36	1940
Johnson	244,004	52	1956	Will	39,667,830	83	1964
Kankakee	8,752,960	43	1962	Williamson	361,330,523	83	1964
Knox	46,035,554	83	1964	Woodford	7,810,160	70	1951
LaSalle	65,547,638	79	1960	Total (1882-1964)		3,804,258,022	
Livingston	10,111,437	80	1961	Estimated production (1833-1881)		73,386,123	
Logan	14,456,208	80	1964	Total production (1833-1964)		3,877,644,145	
Macon	11,000,468	65	1947				
Macoupin	264,450,524	83	1964				
McDonough	2,634,903	69	1951				
McLean	5,544,139	47	1928				
Madison	164,295,772	83	1964				
Marion	39,247,722	82	1963				

a Source: Illinois State Department of Mines and Minerals.

TABLE 7 - ESTIMATED OIL PRODUCTION BY ILLINOIS COUNTIES, 1888-1964^a

County	Total production ^b 1888-1964	1964 Production		1964 value ^c
		Thousands of barrels	Percent of state total	
Adams	147	10	0.01	\$ 29,300
Bond	6,427	149	0.21	436,570
Brown	203	6	0.01	17,580
Christian	20,064	934	1.33	2,736,620
Clark-Cumberland	84,070	865	1.23	2,534,450
Clay	107,254	2,702	3.85	7,916,860
Clinton	74,952	1,536	2.19	4,500,480
Coles	18,308	999	1.42	2,927,070
Crawford	203,299	3,561	5.07	10,433,730
DeWitt	520	245	0.35	717,850
Douglas	3,015	148	0.21	433,640
Edgar	2,543	60	0.09	175,800
Edwards	38,013	1,230	1.75	3,603,900
Effingham	11,124	433	0.62	1,268,690
Fayette	325,418	12,961	18.47	37,975,730
Franklin	59,179	1,646	2.35	4,822,780
Gallatin	40,679	1,263	1.80	3,700,590
Hamilton	105,902	3,148	4.49	9,223,640
Hancock-McDonough	5,032	43	0.06	125,990
Jasper	39,295	768	1.10	2,250,240
Jefferson	68,780	1,856	2.65	5,438,080
Lawrence	329,155	7,127	10.15	20,882,110
Macon	786	36	0.05	105,480
Macoupin	203	8	0.01	23,440
Madison	15,442	320	0.46	937,600
Marion	357,641	8,916	12.70	26,123,880
Monroe	2	-	-	-
Montgomery	107	3	0.01	8,790
Moultrie	56	5	0.01	14,650
Perry	534	56	0.08	164,080
Randolph	3,226	145	0.21	424,850
Richland	82,320	1,985	2.83	5,816,050
St. Clair	2,883	-	-	-
Saline	14,211	609	0.87	1,784,370
Sangamon	880	157	0.22	460,010
Schuyler	1	-	-	-
Shelby	1,101	100	0.14	293,000
Wabash	85,937	2,474	3.53	7,248,820
Washington	22,588	615	0.88	1,801,950
Wayne	185,941	5,682	8.10	16,648,260
White	217,229	7,324	10.43	21,459,320
Williamson	455	43	0.06	125,990
Total	2,534,922	70,168	100.00	\$205,592,240

a Subject to revision.

b In thousands of barrels.

c Average price estimated at \$2.93 per barrel.

TABLE 8 - ILLINOIS STONE PRODUCTION BY REGIONS, 1964^{a, b}

Producing counties and operations ^c		Stone use	Tons	Value	Average per ton
NORTHWEST					
Carroll	Ogle	Road and building			
Henry	Rock Island		3,815,692	\$ 4,531,639	\$1.19
Jo Daviess	Stephenson	Agstone	499,081	643,367	1.29
Lee	Whiteside	All other	133,354	111,302	0.83
Mercer	Winnebago	Total	4,448,127	\$ 5,286,308	\$1.19
Operations - 106					
WEST					
Adams	McDonough	Road and building			
Hancock	Schuyler		1,196,688	\$ 1,582,483	\$1.32
Henderson	Warren	Agstone	400,902	619,539	1.55
Knox		All other	273,983	718,502	2.62
Operations - 20		Total	1,871,573	\$ 2,920,524	\$1.56
WEST SOUTHWEST					
Calhoun	Madison	Road and building			
Christian	Montgomery		1,969,913	\$ 2,982,832	\$1.51
Greene	Pike	Agstone	560,593	811,331	1.45
Jersey	Scott	All other	79,160	152,203	1.92
Operations - 25		Total	2,609,666	\$ 3,946,366	\$1.51
SOUTHWEST					
Clinton	Randolph	Road and building			
Jackson	St. Clair		3,799,401	\$ 5,656,578	\$1.49
Johnson	Union	Agstone	881,707	1,304,290	1.48
Monroe	Washington	All other	1,820,926	2,491,243	1.37
Pulaski		Total	6,502,034	\$ 9,452,111	\$1.45
Operations - 21					
NORTHEAST					
Boone	Kendall	Road and building			
Cook	LaSalle		15,215,814	\$19,151,304	\$1.26
DeKalb	McHenry	Agstone	488,065	709,585	1.45
DuPage	Will	All other	161,416	209,804	1.30
Kane		Total	15,865,295	\$20,070,693	\$1.27
Operations - 32					
EAST					
Kankakee		Road and building			
Livingston			3,121,930	\$ 3,986,242	\$1.28
Vermilion		Agstone	905,582	1,204,526	1.33
Operations - 9		All other	88,616	329,492	3.72
		Total	4,116,128	\$ 5,520,260	\$1.34
CENTRAL					
Logan		Road and building			
Menard			1,035,601	\$ 1,466,024	\$1.42
Peoria		Agstone	269,064	445,807	1.66
Operations - 6		All other	-	-	-
		Total	1,304,665	\$ 1,911,831	\$1.47
EAST SOUTHEAST					
Clark	Fayette	Road and building			
Clay	Marion		797,560	\$ 1,330,149	\$1.67
Colles	Shelby	Agstone	433,349	794,808	1.83
Douglas		All other	-	-	-
Operations - 10		Total	1,230,909	\$ 2,124,957	\$1.73
SOUTHEAST					
Hardin		Road and building			
Jefferson			455,028	\$ 676,461	\$1.49
Massac		Agstone	222,411	370,894	1.67
Operations - 6		All other	-	-	-
		Total	677,439	\$ 1,047,355	\$1.55
STATE TOTALS					
Counties - 59		Road and building			
Operations - 235			31,407,627	\$41,363,712	\$1.32
		Agstone	4,660,754	6,904,147	1.48
		All other	2,557,455	4,012,546	1.57
		Total	38,625,836	\$52,280,405	\$1.35

a Based on U. S. Bureau of Mines figures. All values at the quarry.

b Dimension stone and stone used for cement and lime not included.

c Summary of commercial stone production. Figure 3 shows regions and counties.

TABLE 9 - ILLINOIS COMMON SAND PRODUCTION BY REGIONS, 1964^a

Producing counties and operations ^b		Sand use	Tons	Value	Average per ton
NORTHWEST					
Bureau	Ogle				
Carroll	Rock Island	Paving	998,000	\$ 782,000	\$0.78
Henry	Stephenson	Building	1,056,000	869,000	0.82
Jo Daviess	Whiteside	All other	221,000	108,000	0.49
Lee	Winnebago	Total	2,275,000	\$ 1,759,000	\$0.77
Operations - 25					
WEST					
Adams		Paving	75,000	\$ 46,000	\$0.61
Fulton		Building	85,000	91,000	1.07
		All other	28,000	23,000	0.82
		Total	188,000	\$ 160,000	\$0.85
Operations - 5					
WEST SOUTHWEST					
Bond		Paving	262,000	\$ 272,000	\$1.04
Madison		Building	403,000	413,000	1.02
Pike		All other	47,000	31,000	0.66
Sangamon		Total	712,000	\$ 716,000	\$1.01
Operations - 8					
SOUTHWEST					
Alexander					
Jackson		Paving	256,000	\$ 226,000	\$0.88
Pulaski		Building	271,000	246,000	0.91
Randolph		All other	71,000	59,000	0.83
St. Clair		Total	598,000	\$ 531,000	\$0.89
Operations - 5					
CENTRAL					
DeWitt	Marshall	Paving	521,000	\$ 493,000	\$0.95
Logan	Peoria	Building	651,000	612,000	0.94
McLean	Tazewell	All other	233,000	147,000	0.63
Macon		Total	1,405,000	\$ 1,252,000	\$0.89
Operations - 18					
NORTHEAST					
Boone	Kendall				
Cook	Lake	Paving	2,517,000	\$ 2,352,000	\$0.93
DeKalb	LaSalle	Building	3,698,000	3,282,000	0.89
DuPage	McHenry	All other	761,000	450,000	0.59
Grundy	Will	Total	6,976,000	\$ 6,084,000	\$0.87
Kane					
Operations - 50					
EAST					
Champaign					
Ford		Paving	231,000	\$ 227,000	\$0.98
Kankakee		Building	131,000	116,000	0.89
Livingston		All other	147,000	52,000	0.35
Vermilion		Total	509,000	\$ 395,000	\$0.78
Operations - 10					
EAST SOUTHEAST					
Clark	Fayette	Paving	534,000	\$ 513,000	\$0.96
Coles	Lawrence	Building	72,000	57,000	0.79
Crawford	Shelby	All other	76,000	50,000	0.66
Cumberland		Total	682,000	\$ 620,000	\$0.91
Operations - 16					
SOUTHEAST					
Gallatin		Paving	168,000	\$ 189,000	\$1.13
Massac		Building	148,000	148,000	1.00
Wabash		All other	20,000	10,000	0.50
White		Total	336,000	\$ 347,000	\$1.03
Operations - 10					
STATE TOTALS					
Counties - 55					
Operations - 147		Paving	5,562,000	\$ 5,100,000	\$0.92
		Building	6,515,000	5,834,000	0.90
		All other	1,604,000	930,000	0.58
		Total	13,681,000	\$11,864,000	\$0.87

a Based on U. S. Bureau of Mines figures. All values at the pit.

b Summary of commercial sand production. Figure 3 shows regions and counties.

TABLE 10 - ILLINOIS GRAVEL PRODUCTION BY REGIONS, 1964^a

Producing counties and operations ^b		Gravel use	Tons	Value	Average per ton
NORTHWEST					
Bureau	Ogle				
Carroll	Rock Island	Paving	1,102,000	\$ 1,141,000	\$1.04
Henry	Stephenson	Building	605,000	686,000	1.13
Jo Daviess	Whiteside	All other	69,000	46,000	0.67
Lee	Winnebago	Total	1,776,000	\$ 1,873,000	\$1.05
Operations -- 34					
WEST					
Adams		Paving	269,000	\$ 352,000	\$1.31
Fulton		Building	62,000	94,000	1.52
Henderson		All other	-	-	-
Knox		Total	331,000	\$ 446,000	\$1.35
Operations - 5					
WEST SOUTHWEST					
Bond		Paving	241,000	\$ 330,000	\$1.37
Calhoun		Building	193,000	328,000	1.70
Pike		All other	77,000	53,000	0.69
Sangamon		Total	511,000	\$ 711,000	\$1.39
Operations - 8					
SOUTHWEST					
Alexander		Paving	25,000	\$ 22,000	\$0.88
Pulaski		Building	-	-	-
Union		All other	-	-	-
Operations - 4		Total	25,000	\$ 22,000	\$0.88
CENTRAL					
DeWitt	Mason				
Logan	Peoria	Paving	2,831,000	\$ 3,536,000	\$1.25
McLean	Stark	Building	400,000	535,000	1.34
Macon	Tazewell	All other	110,000	94,000	0.85
Marshall	Woodford	Total	3,341,000	\$ 4,165,000	\$1.25
Operations - 34					
NORTHEAST					
Boone	Kendall				
Cook	Lake	Paving	4,448,000	\$ 3,927,000	\$0.88
DeKalb	LaSalle	Building	4,058,000	3,661,000	0.90
DuPage	McHenry	All other	634,000	410,000	0.65
Grundy	Will	Total	9,140,000	\$ 7,998,000	\$0.88
Kane					
Operations - 69					
EAST					
Champaign	Livingston	Paving	391,000	\$ 407,000	\$1.04
Ford	Vermilion	Building	64,000	88,000	1.38
Iroquois		All other	88,000	76,000	0.86
Operations - 20		Total	543,000	\$ 571,000	\$1.05
EAST SOUTHEAST					
Clark	Fayette	Paving	563,000	\$ 543,000	\$0.96
Coles	Lawrence	Building	43,000	46,000	1.07
Crawford	Moultrie	All other	38,000	50,000	1.32
Cumberland	Shelby	Total	644,000	\$ 639,000	\$0.99
Operations - 17					
SOUTHEAST					
Gallatin		Paving	230,000	\$ 255,000	\$1.11
Massac		Building	16,000	24,000	1.50
Wabash		All other	10,000	12,000	1.20
White		Total	256,000	\$ 291,000	\$1.14
Operations - 10					
STATE TOTALS					
Counties - 59		Paving	10,100,000	\$10,513,000	\$1.04
Operations - 201		Building	5,441,000	5,462,000	1.00
		All other	1,026,000	741,000	0.72
		Total	16,567,000	\$16,716,000	\$1.01

a Based on U. S. Bureau of Mines figures. All values at the pit.

b Summary of commercial gravel production. Figure 3 shows regions and counties.

TABLE 11 - SPECIAL SANDS IN ILLINOIS, 1963-1964^a

Uses	1963		1964	
	Tons	Value	Tons	Value
Silica sand: Glass sand	1,431,265	\$ 3,400,159	1,609,000	\$ 3,295,000
Molding sand	732,082	2,360,519	962,000	3,087,000
Other uses ^b	581,987	2,880,208	434,000	1,881,000
Ground silica ^c	204,004	2,725,942	233,693	3,064,900
Total silica sand	-	\$11,366,828	-	\$11,327,900
Natural bonded molding sand	25,486	48,079	13,000	28,000
Total special sands	-	\$11,414,907	-	\$11,355,900

^a Based on U. S. Bureau of Mines figures.

^b Grinding and polishing, blast, fire and furnace, engine, filter, oil.

^c For abrasives, ceramics, foundry, and filler from ground siliceous material.

TABLE 12 - PRODUCTION OF ILLINOIS CLAY PRODUCTS, 1963-1964

Clay products reported	1963		1964	
	Amount	Value	Amount	Value
Face brick	177,281,183	\$ 7,666,253	181,596,124	\$ 8,293,593
Common brick	149,184,119	3,780,862	142,684,675	3,754,386
Structural tile (tons)	43,805	530,853	33,485	699,046
Drain and sewer tile (tons)	149,092	4,772,295	143,449	4,700,225
Other structural products	-	3,448,505	-	3,548,744
Clay and silica refractories	-	7,599,389	-	7,883,633
Pottery and whiteware	-	26,122,923	-	22,472,918
Total		\$53,921,080		\$51,352,545

TABLE 13 - FLUORSPAR SHIPPED AND CONSUMED, 1960-1964^a

Year	Fluorspar Shipments			Fluorspar ^b consumed in United States	Illinois shipments as percent of U.S. consumption
	United States	Illinois	Illinois as percent of U.S.		
1960	229,782	134,529	58.5	643,759	20.9
1961	197,354	116,908	59.2	687,940	17.0
1962	206,026	132,830	64.5	652,888	20.3
1963	199,948 ^c	132,060	66.1	736,350	17.9
1964	217,137	127,454	58.7	898,414	14.2

^a Source: U. S. Bureau of Mines. Fluorspar figures in tons.

^b Fluorspar consumed includes domestic and foreign material.

^c Revised figure.

TABLE 14 - ILLINOIS ZINC AND LEAD PRODUCTION, 1960-1964^a

Year ^b	Zinc		Lead	
	Tons	Value	Tons	Value
1960	29,550	\$7,623,900	3,000	\$702,000
1961	26,795	6,162,850	3,430	706,580
1962	27,413	6,304,990	3,610	664,240
1963	20,337	4,677,510	2,901	626,616
1964	13,800	3,753,600	2,180	571,160

^a Mine production of recoverable metal.

^b Source: U. S. Bureau of Mines.

Table 15 of this report was designed as a quick and convenient reference to the counties in Illinois producing any of the 14 major mineral products of this state. The table indicates the different mineral products produced by any county in the state, and the numbers show the position held by each county among all counties producing a selected mineral product.

TABLE 15 - SUMMARY OF MINERALS PRODUCED BY ILLINOIS COUNTIES, 1964

Counties	Cement	Clay products	Coal	Crude oil	Fluorspar	Lead	Lime	Natural bonded molding sand	Common sand	Common gravel	Silica sand	Stone	Tripoli	Zinc
Adams	-	-	28	36	-	-	2	-	41	53	-	21	-	-
Alexander	-	-	-	-	-	-	-	-	28	59	-	-	1	-
Bond	-	-	-	26	-	-	-	-	30	24	-	-	-	-
Boone	-	-	-	-	-	-	-	-	45	33	-	35	-	-
Brown	-	23	-	38	-	-	-	-	-	-	-	-	-	-
Bureau	-	-	21	-	-	-	-	-	24	11	-	-	-	-
Calhoun	-	-	-	-	-	-	-	-	-	56	-	59	-	-
Carroll	-	-	-	-	-	-	-	-	53	47	-	32	-	-
Cass	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Champaign	-	-	-	-	-	-	-	-	13	32	-	-	-	-
Christian	-	-	5	17	-	-	-	-	-	-	-	44	-	-
Clark	-	-	-	18	-	-	-	-	40	34	-	25	-	-
Clay	-	-	-	8	-	-	-	-	-	-	-	52	-	-
Clinton	-	-	-	13	-	-	-	-	-	-	-	46	-	-
Coles	-	-	-	16	-	-	-	-	23	36	-	23	-	-
Cook	-	2	-	-	-	-	1	-	7	15	-	1	-	-
Crawford	-	6	-	6	-	-	-	-	50	39	-	-	-	-
Cumberland	-	-	-	35	-	-	-	-	12	35	-	-	-	-
DeKalb	-	-	-	-	-	-	-	-	18	20	-	42	-	-
DeWitt	-	-	-	24	-	-	-	-	44	40	-	-	-	-
Douglas	-	-	15	27	-	-	-	-	-	-	-	47	-	-
DuPage	-	-	-	-	-	-	-	-	20	19	-	11	-	-
Edgar	-	-	-	30	-	-	-	-	-	-	-	-	-	-
Edwards	-	-	-	15	-	-	-	-	-	-	-	-	-	-
Effingham	-	-	-	22	-	-	-	-	-	-	-	-	-	-
Fayette	-	26	-	1	-	-	-	2	48	54	-	53	-	-
Ford	-	-	-	-	-	-	-	-	38	21	-	-	-	-
Franklin	-	-	3	12	-	-	-	-	-	-	-	-	-	-
Fulton	-	-	1	-	-	-	-	-	21	14	-	-	-	-
Gallatin	-	-	25	14	-	-	-	-	26	42	-	-	-	-

TABLE 15 - CONTINUED

Counties	Cement	Clay products	Coal	Crude oil	Fluorspar	Lead	Lime	Natural bonded molding sand	Common sand	Common gravel	Silica sand	Stone	Tripoli	Zinc
Greene	-	16	31	-	-	-	-	-	-	-	-	36	-	-
Grundy	-	9	20	-	-	-	-	-	3	5	-	-	-	-
Hamilton	-	-	-	7	-	-	-	-	-	-	-	-	-	-
Hancock	-	-	-	41	-	-	-	-	-	-	-	27	-	-
Hardin	-	-	-	-	1	1	-	-	-	-	-	18	-	1
Henderson	-	-	-	-	-	-	-	-	-	49	-	26	-	-
Henry	-	-	23	-	-	-	-	1	49	41	-	48	-	-
Iroquois	-	-	-	-	-	-	-	-	-	50	-	-	-	-
Jackson	-	-	11	-	-	-	-	-	33	-	-	31	-	-
Jasper	-	-	-	19	-	-	-	-	-	-	-	-	-	-
Jefferson	-	-	8	11	-	-	-	-	-	-	-	51	-	-
Jersey	-	-	-	-	-	-	-	-	-	-	-	45	-	-
Jo Daviess	-	-	-	-	-	2	-	-	27	57	-	20	-	2
Johnson	-	-	-	-	-	-	-	-	-	-	-	9	-	-
Kane	-	8	-	-	-	-	-	-	5	3	-	28	-	-
Kankakee	-	17	-	-	-	-	-	-	55	-	-	3	-	-
Kendall	-	-	-	-	-	-	-	-	43	27	-	43	-	-
Knox	-	4	14	-	-	-	-	-	-	51	-	34	-	-
Lake	-	7	-	-	-	-	-	-	8	8	-	-	-	-
LaSalle	1	1	-	-	-	-	-	-	15	7	1	38	-	-
Lawrence	-	-	-	4	-	-	-	-	32	16	-	-	-	-
Lee	2	-	-	-	-	-	-	-	25	26	-	17	-	-
Livingston	-	24	-	-	-	-	-	-	46	23	-	5	-	-
Logan	-	-	29	-	-	-	-	-	19	25	-	41	-	-
McDonough	-	3	-	33	-	-	-	-	-	-	-	33	-	-
McHenry	-	20	-	-	-	-	-	-	1	1	-	58	-	-
McLean	-	-	-	-	-	-	-	-	36	10	-	-	-	-
Macon	-	-	-	34	-	-	-	-	16	22	-	-	-	-
Macoupin	-	-	19	37	-	-	-	-	-	-	-	-	-	-
Madison	-	11	22	23	-	-	-	-	17	-	-	14	-	-
Marion	-	-	-	2	-	-	-	-	-	-	-	55	-	-
Marshall	-	18	-	-	-	-	-	-	54	17	-	-	-	-
Mason	-	-	-	-	-	-	-	3	-	52	-	-	-	-
Massac	3	-	-	-	-	-	-	-	34	58	-	56	-	-
Menard	-	-	30	-	-	-	-	-	-	-	-	22	-	-
Mercer	-	19	26	-	-	-	-	-	-	-	-	49	-	-

TABLE 15 - CONTINUED

Counties	Cement	Clay products	Coal	Crude oil	Fluorspar	Lead	Lime	Natural bonded molding sand	Common sand	Common gravel	Silica sand	Stone	Tripoli	Zinc
Monroe	-	-	-	-	-	-	-	-	-	-	-	24	-	-
Montgomery	-	-	10	40	-	-	-	-	-	-	-	12	-	-
Morgan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moultrie	-	-	-	39	-	-	-	-	-	46	-	-	-	-
Ogle	-	-	-	-	-	-	-	-	22	12	2	16	-	-
Peoria	-	-	12	-	-	-	-	-	9	4	-	15	-	-
Perry	-	-	6	31	-	-	-	-	-	-	-	-	-	-
Piatt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pike	-	-	-	-	-	-	-	-	51	37	-	19	-	-
Pope	-	-	-	-	2	3	-	-	-	-	-	-	-	3
Pulaski	-	22	-	-	-	-	-	-	52	55	-	37	-	-
Putnam	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Randolph	-	-	9	28	-	-	-	-	31	-	-	7	-	-
Richland	-	-	-	10	-	-	-	-	-	-	-	-	-	-
Rock Island	-	25	-	-	-	-	-	4	6	28	-	6	-	-
St. Clair	-	15	4	-	-	-	-	-	14	-	-	2	-	-
Saline	-	-	7	21	-	-	-	-	-	-	-	-	-	-
Sangamon	-	14	24	25	-	-	-	-	11	18	-	-	-	-
Schuyler	-	-	16	-	-	-	-	-	-	-	-	54	-	-
Scott	-	21	-	-	-	-	-	-	-	-	-	50	-	-
Shelby	-	-	-	29	-	-	-	-	47	44	-	57	-	-
Stark	-	-	18	-	-	-	-	-	-	48	-	-	-	-
Stephenson	-	-	-	-	-	-	-	-	35	38	-	30	-	-
Tazewell	-	13	-	-	-	-	-	-	10	6	-	-	-	-
Union	-	-	-	-	-	-	-	-	-	45	-	8	-	-
Vermilion	-	12	13	-	-	-	-	-	29	31	-	10	-	-
Wabash	-	-	32	9	-	-	-	-	37	29	-	-	-	-
Warren	-	10	-	-	-	-	-	-	-	-	-	39	-	-
Washington	-	-	27	20	-	-	-	-	-	-	-	40	-	-
Wayne	-	-	-	5	-	-	-	-	-	-	-	-	-	-
White	-	-	-	3	-	-	-	-	39	30	-	-	-	-
Whiteside	-	-	-	-	-	-	-	-	42	43	-	29	-	-
Will	-	5	17	-	-	-	-	-	2	2	-	4	-	-
Williamson	-	-	2	32	-	-	-	-	-	-	-	-	-	-
Winnebago	-	-	-	-	-	-	-	-	4	9	-	13	-	-
Woodford	-	-	-	-	-	-	-	-	-	13	-	-	-	-

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CIRCULAR 392

ILLINOIS STATE GEOLOGICAL SURVEY

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