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MICHIGAN'S
MINERAL INDUSTRIES
1952

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SUMMARY OF MINERAL INDUSTRIES

1952

Despite decreased production of some minerals, another new record for Michigan's mineral industries was set in 1952. The total value of Michigan's mineral output--\$267,089,923--is the highest in the state's history and represents an increase of \$9,559,541 over 1951. The general upward trend has been continuous since 1938, as indicated by Figure 1.

A decrease both in production and value for fuels (petroleum, natural gas, and natural gasoline) was recorded in 1952. The gradual yearly decline of these commodities is due, largely, to failure to find new fields of importance and the depletion of present oil and gas fields. Production of metallic minerals (iron ore and copper) was down because of crippling strikes which curtailed production during the middle of the year. The total value of these metallic minerals, however, increased \$4,563,883 over 1951 owing to an increase in selling price. Non-metallic minerals (includes all other minerals produced in the state) increased \$7,181,306, or approximately 6 per cent, over 1951. This increase was the result of greater output of Portland cement, sand and gravel, clay products, peat, and the miscellaneous minerals (bromine, calcium-magnesium chloride, and clay).

Michigan, ranking twelfth in the nation in mineral production, was first in production of gypsum, salt, marl, and calcium-magnesium chloride; second in iron ore, sand and gravel, magnesium compounds, bromine, and peat; fourth in stone, and fifth in Portland cement.

Production and value of minerals and mineral products for 1950 and 1951 are shown in Tables I and II. A breakdown of the total value of Michigan minerals for 1952 is as follows:

Metallic minerals (iron and copper)	\$ 94,762,577	35.4%
Fuels (petroleum, natural gas, natural gasoline, coal)	38,093,047	14.3%
Non-metallic minerals and mineral products (all others)	134,233,799	50.3%
		100.0%

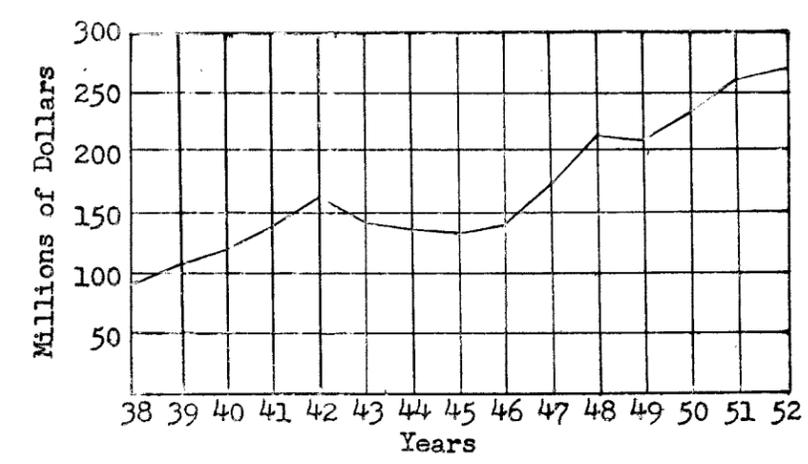


Figure 1. Value of Minerals and Mineral Products in Michigan, 1938 - 1952

Metallic Minerals

Iron ore: Of all Michigan minerals, iron ore, valued at \$83,942,523 in 1952 (7 per cent more than the 1951 value) remained the state's principal mineral product. A decrease of 1,875,623 tons below 1951 production was the result of a strike which led to the loss of two months' production during the peak of the operating season. The loss, however, was reduced to a large degree by strenuous efforts on the part of the producers and the addition of new freighters to the Great Lakes carrier fleet.

Michigan, exceeded only by Minnesota, continued to rank second in the nation in the production of iron ore. Thirty underground mines and seven open pits were operated on the state's three iron ranges--the Gogebic Range, Gogebic County; Marquette Range, Marquette County; and the Menominee Range, Iron and Dickinson counties.

The large potential resources of iron ore, in the form of low-grade iron-bearing rock, brought about construction of the state's second beneficiation plant at Humboldt, Marquette County, and plans were announced for another plant at Republic, Marquette County. These plants, along with the Ohio mine plant near Michigamme, Baraga County, which completed its first year of operation in 1952, will concentrate a shipping product from the low-grade iron-bearing formations which previously had been considered non-commercial.

Iron Ore Shipments by Ranges, 1952

Range	Number of mines		Iron ore shipped (Long tons)		
	Underground	Open pit	Direct shipping	Siliceous	Total
Marquette	11	4	4,251,610	264,899	4,516,509
Menominee	14	2	4,183,889	93,991	4,277,880
Gogebic	5	1	3,003,861	...	3,003,861
Total	30	7	11,439,360	358,890	11,798,250

Shipments and Value of Iron Ore 1948-1952

Year	Shipments (Long tons)	Value
1948	12,768,167	\$59,394,187
1949	10,737,137	57,722,248
1950	12,926,756	73,214,839
1951	13,673,873	78,120,718
1952	11,798,250	83,942,523

Copper: Copper, Michigan's other metallic mineral, also had a loss in production as a result of a strike. Although a production loss of 11 per cent was recorded, the industry contributed \$10,820,054 to the state's total. Nine copper mines, in Houghton and Keweenaw counties, produced approximately 80 per cent of the total copper output. The remaining 20 per cent was recovered by three reclamation plants from waste or tailings rejected by earlier mill operations.

Early in 1952 it was announced that the Reconstruction Finance Corporation had made a \$57,100,000 loan to the White Pine Copper Company to develop the White Pine mine, Ontonagon County. During the year much of the construction was concerned with the townsite, although foundation work and some construction had been done at the various mine and milling buildings. The White Pine mine will be unique in so far as Michigan is concerned since the orebody is in the Nonsuch shale and is mainly copper sulphide (chalcocite) with minor amounts of native copper. Presently operating copper mines in Houghton and Keweenaw counties obtain native copper from the Keweenaw lava flows or interbedded rhyolite conglomerates.

Copper Production in Michigan, 1952

County	Number of		Copper production (Pounds)		
	Mines	Reclamations	Mines	Reclamations	Total
Houghton	3	3	*11,090,636	9,191,437	20,282,073
Keweenaw	6	0	23,657,231	...	23,657,231
Total	9	3	34,747,867	9,191,437	43,939,304

*Includes a small output from Ontonagon County.

Copper Production 1948-1952

Year	Quantity (pounds)	Value
1948	54,434,042	\$12,242,216
1949	38,498,167	7,380,099
1950	51,788,017	10,997,185
1951	49,297,864	12,077,976
1952	43,939,304	10,820,054

Fuels

Petroleum: Petroleum production in Michigan decreased 5 per cent in quantity and approximately 4 per cent in value below that of 1951. At the end of the year there were 3,979 oil wells producing in 37 counties. Approximately 46 per cent of the output was from Arenac, Isabella, Oceana, and Osceola--each contributing more than one million barrels. The principal producing oil formations are the Traverse, Dundee, and Detroit River. Minor amounts of oil were taken from the "Michigan Stray", Berea, and Trenton formations. A review of 1952 operations for oil and gas is recorded in the 1952 Summary of Operations, Oil and Gas fields, Michigan Geological Survey.

Natural Gas: Natural gas production declined 17.5 per cent to 8,677,737,000 cubic feet, valued at \$1,353,727. At the end of the year there were 1,111 gas wells producing in 22 counties. Livingston, Isabella,

and Crawford led all counties--each producing more than one billion cubic feet. The principal gas-producing formations in order of importance were the Salina, "Michigan Stray", and the Detroit River. Other formations furnishing to the output were Traverse, Dundee, Berea, and Antrim.

Table I. Petroleum and Natural Gas Production 1948-1952

Year	Petroleum		Natural gas	
	Quantity (barrels)	Value	Quantity (M. cu. feet)	Value
1948	16,871,046	\$48,348,084	21,369,587	\$3,040,403
1949	16,517,333	45,610,021	14,660,247	2,101,845
1950	15,826,148	43,157,905	12,614,024	1,967,788
1951	13,926,518	37,949,762	10,524,495	1,641,821
1952	13,251,387	36,176,306	8,677,737	1,353,727

Natural Gasoline: Michigan, in 1952, produced from oil-well gas a total of 5,330,139 gallons of natural gasoline and allied products valued at \$533,014. This was a loss of 22 per cent in both quantity and value below that of 1951 when 6,871,119 gallons were produced, valued at \$687,112. Six counties entered into the production with Crawford ranking first with 56 per cent of the total state output.

Coal: Coal production, once a major industry in Michigan, now has become history. The closing of the Swan Creek mine, near St. Charles, Saginaw County, during April, marked the end of commercial coal production in the state. More than 46,200,000 tons were produced from 1860 to 1952, with a peak production of 2,035,000 tons in 1907 from 37 mines. Although Michigan has an estimated coal reserve of 220,000,000 tons, the future of the industry does not seem favorable. However, it is possible that changes in fuel economy and technology may, in the future, result in local mining activity. A report "Coal Resources of Michigan", by George V. Cohee, U. S. Geological Survey Circular 77, June 1950, may be obtained through the Michigan Geological Survey.

Table II. Natural Gasoline and Coal Production 1948-1952

Year	Natural Gasoline		Coal		Number of mines
	Quantity (gallons)	Value	Quantity (short tons)	Value	
1948	4,402,062	\$419,000	14,000	\$120,000	1
1949	4,268,880	230,518	*	*	1
1950	5,218,794	349,660	*	*	1
1951	6,871,119	687,112	*	*	1
1952	5,330,139	533,014	*	*	1

*One operator; data cannot be revealed.

Non-Metallic Minerals

Portland cement: A gain of 648,144 barrels, 4.5 per cent over that of 1951, gave a new all time high for Portland cement. The industry was able to make such a record because of the installation of new mill facilities, modernization, and better utilization of existing plants. Alpena County was the leading producer, with Wayne County ranking second. Other producing counties were Bay, Emmet, Lenawee, and St. Clair. Raw materials used in production of Michigan cement included 3,860,560 short tons of crushed limestone (includes lime-mud), 1,163,184 short tons of clay and shale, and 117,974 short tons of gypsum. Antrim shale from Alpena County and Ellsworth shale from Antrim County were used in the manufacture of cement in the northern plants. All the southern plants used local clays. The greater portion of the limestone used was from the Traverse and Dundee formations in the northern part of the Southern Peninsula. All gypsum used by the cement plants was purchased.

A number of improvements were announced by the Huron Portland Cement Company, Alpena, during the year. Shale quarrying operations at the Paxton Quarry were revised. A crusher was installed on the quarry floor and stocking and reclaiming belt systems were built. The shale is hauled by rail eleven miles to the drier building at the cement plant. Orders were placed by the company for four new Allis-Chalmers kilns to be installed at the plant. Also, a fourth vessel was added during the year to their fleet of cargo vessels.

The Consolidated Cement Corporation, Lenawee County, which, for many years, used marl or a combination of marl and limestone from Michigan sources, now is obtaining limestone from a new quarry which is located four miles north of Paulding, Ohio.

Portland Cement Shipments 1948-1952

Year	Shipments (barrels)	Value	Rank in U.S.	No. of Plants
1948	11,116,911	\$23,533,001	5	7
1949	12,747,791	28,823,055	5	7
1950	12,854,423	29,619,766	5	7
1951	14,112,639	35,121,324	5	7
1952	14,760,783	36,819,041	5	7

Stone: Stone sold or used by the Michigan producers in 1952 amounted to 18,001,080 short tons, valued at \$15,590,573. This was a decrease of 14 per cent in quantity and 8.7 per cent in value below 1951. The major contributing factor to this decrease of 2,934,687 short tons was the 2-month strike in the iron ore industry which curtailed the demand for flux by the steel industry. More than a million tons of limestone or dolomite was produced from each of the following counties: Alpena, Chippewa, Mackinac, and Presque Isle. Other producing counties included Arenac, Cheboygan, Delta, Eaton, Emmet, Huron, Jackson, and Monroe.

Other stone produced during the year included dimensional limestone in Eaton, Huron, Monroe and Presque Isle counties; sandstone (rough construction, rubbles, and flagging stone) in Jackson County; and crushed sandstone and basalt (road construction) in Houghton County.

Announcement was made during the year that the Kelly Island Lime and Transport Company was completing negotiations with six steel companies which will lead to construction of an \$8,000,000 limestone plant north of Bell in southeastern Presque Isle County. It was estimated that 4,000,000 tons of limestone will be produced annually from the reopened "Lake of the Woods" quarry to provide the steel firms with flux stone which is used in the steel making operations. The stone to be quarried will be that of the high calcium Dundee formation.

During November the Michigan Stone Company began producing aggregate for road construction purposes from a reopened quarry one and one-half miles west and one mile south of Amberville, Monroe County. Stone utilized is from one or more members of the Bass Island group.

Stone Production, 1952

	Quantity (Short tons)	Value
Limestone and dolomite:		
Crushed	17,938,709	\$15,499,591
Dimensional	4,103	49,547
Sandstone:		
Crushed	14,000	10,500
Dimensional	2,268	9,926
Basalt:		
Crushed	42,000	21,009
Total	*18,001,080	\$15,590,573

Uses of Michigan's Crushed Limestone and Dolomite, 1952

Uses	Per cent of total	Quantity (Short tons)	Value
Flux	56.6	10,088,650	\$ 7,345,376
Concrete, road metal	17.8	3,273,135	3,395,560
Alkali	14.8	2,649,171	1,873,791
Agriculture	3.9	695,028	931,041
**Other uses	6.9	1,232,725	1,953,823
Total	100.0	*17,938,709	\$15,499,591

*Does not include 6.3 million tons of limestone used in the manufacture of Portland cement and lime.

**Includes calcium carbide, railroad ballast, sugar, paper, stone sand, mineral feeds, riprap, whiting, fill, coal dust, glass, carbon, asphalt, and ornamental concrete (terrazzo).

Production of Stone 1948-1952

Year	Quantity (Short tons)	Value	Rank in U.S.
1948	19,710,576	\$14,906,111	3
1949	16,546,670	13,387,334	4
1950	19,095,703	15,389,684	3
1951	20,935,767	17,082,206	3
1952	18,001,080	15,590,573	4

Sand and gravel: Reported sand and gravel production showed an increase of approximately 10 per cent in quantity and about 15 per cent in value over 1951, the former record-breaking year. The apparent increase in production of this commodity was due, largely, to additional data obtained from a more complete canvass of new producers. The producers' reports indicated a decrease in tonnage for molding sand only.

Production of sand and gravel was from all but 12 counties with Oakland ranking first. Commercial producers accounted for 23,031,994 tons of sand and gravel which sold at an average price of \$0.85 per ton. The remaining 4,069,595 tons was non-commercial sand and gravel, reported by governmental agencies.

Uses of Sand and Gravel, 1952

Uses	Quantity (Short tons)	Value	Per cent of total
Molding sand	1,730,833	\$ 1,521,629	6.4
Structural sand	3,307,895	2,596,319	12.2
Paving and road sand	3,836,508	2,940,180	14.2
*Other sand	1,740,134	1,601,337	6.4
Structural gravel	4,252,780	3,546,691	15.7
Paving and road gravel	11,505,875	8,248,919	42.4
Railroad ballast gravel	534,275	434,251	1.9
Other gravel	218,039	160,799	.8
Total	27,126,339	\$21,050,125	100.0

*Includes glass sand, grinding and polishing sand, engine sand, and railroad ballast sand.

Production of Sand and Gravel 1948-1952

Year	Quantity (Short tons)	Value	Rank in U.S.
1948	20,671,078	\$14,071,712	2
1949	20,475,996	13,992,903	2
1950	24,559,253	16,699,203	2
1951	24,688,264	18,324,872	2
1952	27,126,339	21,050,125	2

Salt: Salt production for the state decreased 359,292 short tons below that of 1951. Of the five counties reporting salt production, Wayne County was first, with more than 70 per cent of the state's total output. Approximately 80 per cent of the salt produced was used as brine in the manufacture of soda ash, chlorine, and bleaches, and for other chemical uses. Dry and evaporated salt were used principally for food processing, highway maintenance, refrigeration, hides and leather, livestock, table salt, and others.

The Hooker Electrochemical Company, Niagara Falls, New York, announced plans for a new \$10,000,000 chemical plant to be constructed at Montague, Muskegon County. Raw material for the plant will be salt brine obtained by solution of Salina salt. The brine will be converted by electrolytic cells into chlorine, caustic soda, and hydrogen. Two salt wells already have been drilled and others will be drilled in the 200 acre area set aside for a brine field. The plant is expected to be in operation by the end of 1953 or early in 1954 with a yearly production rate of 100,000 tons of all products. The output of the plant is intended to serve Midwest industry and, in all probability, will draw other chemical concerns into the area.

Uses of Michigan Salt, 1952

Uses	Quantity (Short tons)
Chemical	3,150,000
Food processing	448,000
Highway, dust and ice control	355,000
Livestock	247,000
Table and other household	126,000
Water treatment	69,000
Metallurgy	55,000
Textile, hides and leather processing	48,000
Refrigeration	47,000
Agriculture	44,000
Other	189,000
Total	4,778,000

Salt Production 1948-1952

Year	Quantity (Short tons)	Value	Rank in U.S.	Per cent of U.S. total
1948	4,387,879	\$16,265,743	1	26.7
1949	4,064,106	16,009,117	1	26.1
1950	4,446,667	18,178,765	1	26.7
1951	5,137,639	21,221,330	1	25.4
1952	4,778,347	21,446,382	1	24.4

Clay and shale: A production of 1,580,123 short tons of raw clay and shale was reported for the state during 1952. This is an increase of 3 per cent over 1951. Uses made of the raw clay and shale were approximately 70 per cent for the manufacture of Portland cement, nearly 30 per cent in the manufacture of clay products (brick, tile, pottery, and lightweight aggregate), and a small quantity for prepared clays.

Clay products: The value of Michigan's clay products (brick, tile, pottery, and lightweight aggregate), was estimated at \$4,534,000 in 1952, or \$578,000 less than 1951. This decrease was the result of the closing of the Haggerty Brick Company and the Ionia Pottery Company in 1951 and the temporary discontinuance of operations at the Matco Corporation's Oakland County plant in 1952.

Production of Clay and Shale and Clay Products 1948-1952

Year	Raw clay and shale		Clay products Estimated value
	Quantity *(Short tons)	*Value	
1948	1,308,170	\$ 985,740	\$3,764,000
1949	1,363,440	1,013,250	3,650,000
1950	1,426,659	1,137,002	5,499,000
1951	1,531,732	1,592,137	5,112,000
1952	1,580,123	1,615,122	4,534,000

Gypsum: For the eighth consecutive year Michigan ranked first in the nation in the production of crude gypsum. Total production, however, decreased 5 per cent compared with a 3 per cent national decrease.

All gypsum again was obtained from the Michigan formation from two quarries in Iosco County and two mines in Kent County. Iosco County ranked above Kent County in total production. The manufacture of building materials is by far the most important use of this commodity.

Production of Gypsum 1948-1952

Year	Quantity (Short tons)	Value	Per cent of U.S.	Rank
1948	1,309,331	\$3,617,868	18	1
1949	1,264,511	3,470,294	19	1
1950	1,474,210	4,090,777	18	1
1951	1,566,276	4,402,725	18	1
1952	1,487,642	4,200,418	18	1

*Sold or used; value of clay used in cement and heavy clay products not included in total value of state.

Peat: Five concerns reported peat production in Michigan during 1952. Production was 36,020 short tons valued at \$430,156, an increase of 78 per cent in tonnage over 1951. The state ranked second in the nation in the production of peat. Its principal use is in soil improvement and mixed fertilizers.

Production of Peat 1948-1952

<u>Year</u>	<u>Quantity (Short tons)</u>	<u>Value</u>	<u>Per cent of U.S.</u>	<u>Rank in U.S.</u>
1948	12,425	\$154,500	...	4
1949	*	*	*	5
1950	13,629	186,000	10.4	4
1951	20,180	320,100	10.4	5
1952	36,020	430,156	16.6	2

*Data concealed.

Marl: Commercial marl production was reported in 24 counties during 1952. The production of 130,613 short tons valued at \$119,705 was a decrease of 10 per cent in production and 5 per cent in value in relation to 1951. All marl was used for agricultural purposes.

Production of Marl 1948-1952

<u>Year</u>	<u>Quantity (Short tons)</u>	<u>Value</u>	<u>Rank in U.S.</u>
1948	*	*	*
1949	1,500	\$ 1,500	...
1950	218,429	122,212	1
1951	144,731	125,480	1
1952	130,613	119,705	1

*No production reported.

Lime: Lime was produced by three plants in the state. Mason County continued to rank first in production, followed by Menominee and Bay counties. All used raw stone from the high-calcium limestone quarries of northern Michigan. The principal uses of the lime, as reported by the producers, were for chemical and industrial purposes, in the production of calcium carbide and cyanamide, paper manufacture, water purification, agricultural lime, and sugar refining. Smaller amounts of lime were used in tanneries, brick, metallurgy, insecticides, petroleum refining, wood distillation, and salt refining.

Bromine, calcium-magnesium chloride, magnesium compounds, potash: Natural brines comprise the raw material for the production of bromine, calcium-magnesium chloride, magnesium compounds, and potash. The value of the natural salines recovered by the plants increased 21.5 per cent over 1951. Midland County again ranked first in production, followed by Mason, Manistee, and Gratiot counties. Magnesium compounds had the greatest increase in volume and, with bromine, retained the rank of second place in the nation. The sales for bromine during the year were accounted for by ethylene dibromide, for use in gasoline antiknock compounds; methyl bromide, used as a fumigant; elemental bromine and other bromine compounds, used in the dye and photographic industries, and for medicinal, chemical, and metallurgical purposes. A larger production of calcium chloride and calcium-magnesium chloride was reported for the year, and usage of these salts for highway and road maintenance increased. Potassium salt (KCl) production remained about the same as for 1951. Only one company reported recovery of this commodity from natural brines.

Natural brines are pumped from deep wells penetrating the Marshall, Dundee, and Sylvania formations by chemical plants in Midland and Gratiot counties, and from the Filer sandstone member of the Detroit River group by chemical plants in Mason and Manistee counties.

Value of Michigan's Minerals
and
Mineral Products
1938-1952

<u>Year</u>	<u>Value</u>	<u>Year</u>	<u>Value</u>
1938	\$ 75,897,923	1946	\$133,672,135
1939	109,867,740	1947	170,269,272
1940	117,991,285	1948	214,115,771
1941	135,492,921	1949	207,607,694
1942	152,624,946	1950	238,474,008
1943	147,113,888	1951	257,529,882
1944	140,493,319	1952	267,089,423
1945	128,046,408		

TABLE I
MINERAL PRODUCTS OF MICHIGAN, 1952⁽¹⁾

<u>Product</u>	<u>Unit</u>	<u>Quantity</u>	<u>Value</u>	<u>Rank in U.S.</u> ⁽²⁾
Iron Ore	Long tons	11,798,250	\$ 83,942,523	2
Portland cement	Barrels	14,760,783	36,819,041	5
Petroleum	Barrels	13,251,387	36,176,306	...
Salt	Short tons	4,778,347	21,446,382	1
Sand and gravel	Short tons	27,126,339	21,050,125	2
Stone ⁽³⁾	Short tons	18,001,080	15,590,573	4
Copper	Pounds	43,939,304	10,820,054	...
Clay products	4,534,000	...
Gypsum	Short tons	1,487,642	4,200,418	1
Natural gas	M. cu. ft.	8,677,737	1,353,727	...
Clay and shale, raw	Short tons	1,580,123	(4)	
Natural gasoline	Gallons	5,330,139	533,014	...
Peat	Short tons	36,020	430,156	2
Marl	Short tons	130,613	119,705	1
Miscellaneous ⁽⁵⁾	<u>30,073,203</u>	
Total			\$267,089,423	

(1) Statistics compiled in cooperation with the United States Bureau of Mines.

(2) Based upon quantity.

(3) Limestone used in the manufacture of Portland cement and lime not included.

(4) Value of clay and shale used in clay products and cement industries not included in state total value; value of other clays included under miscellaneous.

(5) Includes bromine, magnesium compounds, calcium chloride, calcium-magnesium chloride, clay, coal, lime, and potassium salts.

TABLE II
MINERAL PRODUCTS OF MICHIGAN, 1951⁽¹⁾

Product	Unit	Quantity	Value	Rank in U.S. (2)
Iron ore	Long tons	13,673,873	\$ 78,120,718	2
Petroleum	Barrels	13,926,518	37,949,762	...
Portland cement	Barrels	14,112,639	35,121,324	5
Salt	Short tons	5,137,639	21,221,330	1
Sand and gravel	Short tons	24,688,264	18,324,872	2
Stone ⁽³⁾	Short tons	20,935,767	17,082,206	3
Copper	Pounds	49,297,864	12,077,976	...
Clay products	5,111,585	...
Gypsum	Short tons	1,566,276	4,402,725	1
Natural gas	M. cu. ft.	10,524,495	1,641,821	...
Clay and shale, raw	Short tons	1,531,732	(4)	
Natural gasoline	Gallons	6,871,119	687,112	...
Peat	Short tons	20,180	320,100	5
Marl	Short tons	144,731	125,480	1
Miscellaneous ⁽⁵⁾	25,257,902	
Total			\$257,529,882	

(1) Statistics compiled in cooperation with the United States Bureau of Mines.

(2) Based upon quantity.

(3) Limestone used in the manufacture of Portland cement and lime not included.

(4) Value of clay and shale used in clay products and cement industries not included in state total value; value of other clays included under miscellaneous.

(5) Includes bromine, magnesium compounds, calcium chloride, calcium-magnesium chloride, clay, coal, lime, and potassium salts.

PRODUCTION AND VALUE
of
MINERALS AND MINERAL PRODUCTS
BY COUNTIES

1952

All counties, except Grand Traverse, reported mineral production for 1952. Marquette, Iron, Wayne, Gogebic, and Midland led all others in value, contributing 47 per cent of the state's total.

The quantity and value of mineral production are given on a county basis, where possible. In some cases it has been necessary to combine counties or to show the county value as an undistributed total to avoid disclosure of individual company operations. The numeral in parentheses following the county name indicates the county's rank in the state in value of mineral production. Figures in parentheses following a mineral resource show the rank of the county in the production of that resource and the county's percentage of the state's total production.

All indicated tonnage is in short tons (2,000 lbs.), with the exception of iron ore, which is reported in long tons (2,240 lbs.).

Mineral producers and their products are listed, by counties, below production data. Location of the operation, when known, is given by section, township, and range.

	Quantity	Value
ALCONA (62)		
Sand and gravel	223,303 tons	\$ 133,982
Alcona County Road Commission	Sand and gravel	
ALGER (82)		
Sand and gravel	6,471 tons	\$ 324
Leonard Johnson Max Knaus	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 33, T. 45N., R. 21W.	Sand and gravel Sand and gravel
ALLEGAN (37)		
Petroleum (14th, 3%)	369,878 bbls.	\$1,009,767
Sand and gravel	245,606 tons	123,396
Marl (1st, 14%)	18,775 tons	11,087
Natural gas	26,997 M. Cu. Ft.	4,212
Total value		\$1,148,462

(Allegan County contd.)

	Quantity	Value
Cleo L. Arndt	Sand and gravel	
Gerald Arnsman	Marl	
Walter Bale	Marl	
Emil Pavlak	Marl	
Harry Pickitt	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 34, T. 3N., R. 13W. NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5, T. 1N., R. 14W.	Sand and gravel
Ben Waanders	Sand and gravel	
West Shore Construction Company	Sand and gravel	

ALPENA (6)

Portland cement (1st), stone--crushed
limestone (4th, 6%), shale* (1st) (Combined with Presque Isle Co.)

Huron Portland Cement Company	NE $\frac{1}{4}$ Sec. 30, T. 31N., R. 7E. Sec. 24, T. 31N., R. 8E.	Shale Portland cement
Wyandotte Chemical Corporation	Sec. 13, T. 31N., R. 8E.	Limestone, crushed

ANTRIM (77)

Shale* (2nd), sand and gravel (Combined with Cheboygan Co.)

Antrim County Road Commission	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T. 30N., R. 6W.	Sand and gravel
Harry Pickitt		Sand and gravel
Petoskey Portland Cement Company	SE $\frac{1}{4}$ Sec. 23, T. 32N., R. 8W.	Shale

ARENAC (12)

Petroleum (1st, 16%), stone--crushed
limestone, sand and gravel \$ 5,868,857

Arenac County Road Commission	NW $\frac{1}{4}$ Sec. 5, T. 19N., R. 7E.	Limestone
Deep River Block and Sand Company		Sand and gravel

*Value of shale used in manufacture of Portland cement not included in county total.

Quantity Value

BARAGA (50)

Iron ore, sand and gravel	(Combined with Dickinson Co.)
Baraga County Road Commission	Sand and gravel
The Cleveland-Cliffs Iron Company	
Ohio-Webster mine Secs. 22, 26, 27, T. 48N., R. 31W.	Iron ore
D. S. S. and A. Railroad	Sand and gravel

BARRY (57)

Petroleum	36,653 bbls.	\$ 100,063
Sand and gravel	227,943 tons	91,593
Marl	5,625 tons	8,250
Total value		\$ 199,906

Barry County Road Commission	SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 4, T. 4N., R. 9W.) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29, T. 3N., R. 9W.) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 25, T. 2N., R. 10W.)	Sand and gravel
H. A. Carlton Schau		Marl
Lancaster Sand and Gravel	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 18, T. 3N., R. 8W.	Sand and gravel
A. D. Pennock	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1, T. 2N., R. 7W.	Sand and gravel
Harry Pickitt		Sand and gravel
H. Steenbock and Son	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 12, T. 3N., R. 9W.	Sand and gravel
John G. Yerington		Sand and gravel
George Zimmerman		Marl

BAY (10)

Petroleum (5th, 6%)	838,298 bbls.	\$2,288,554
Undistributed: Portland cement (3rd), lime (3rd), natural gas		3,900,792
Total value		\$6,189,346

Aetna Portland Cement Company	Bay City	Portland cement
Monitor Sugar Co. Div., Robert Gage		
Coal Company	Bay City	Lime

	<u>Quantity</u>	<u>Value</u>
BENZIE (76)		
Sand and gravel	40,300 tons	\$ 18,100
Benzie County Road Commission	Sand and gravel	
BERRIEN (63)		
Sand and gravel	213,012 tons	\$120,671
Petroleum	4,595 bbls.	<u>12,544</u>
Total value		\$133,215
Ireland and Lester Company	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec.24, T.4S.,R.19W.	Sand and gravel
Harold Kiell Walkden Sand and Gravel Company	Sand and gravel	
John G. Yerington	NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec.36, T.7S.,R.18W.	Sand and gravel
BRANCH (72)		
Sand and gravel	74,100 tons	\$ 31,139
Marl	2,708 tons	<u>3,249</u>
Total value		\$ 34,388
Branch County Road Commission	Sand and gravel	
Reed and Wood	Marl	
CALHOUN (55)		
Sand and gravel (12th, 2%)	497,433 tons	\$257,524
Marl (2nd, 14%)	17,938 tons	<u>7,535</u>
Total value		\$265,059
Arnie Delebaugh	Marl	
Carl Avery	Marl	
Battle Creek Gravel Company	Sand and gravel	
Calhoun County Road Commission	Sand and gravel	

	<u>Quantity</u>	<u>Value</u>
(Calhoun Co. contd)		
City Engineer, Battle Creek	NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec.33, T.1S., R.8W.) SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec.4, T.2S., R.8W.)	Sand and gravel
Emil Combs		Sand and gravel
Harry Pickitt		Sand and gravel
Clyde M. Reed		Marl
West Shore Construc- tion Company		Sand and gravel
John G. Yerington		Sand and gravel
CASS (64)		
Sand and gravel	276,823 tons	\$ 121,932
Marl	8,375 tons	<u>7,463</u>
Total value		\$ 129,395
Grant Brizendine Cass County Road Commission	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec.20, T.5S.,R.13W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec.17, T.6S.,R.13W.) NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec.16, T.6S.,R.15W.)	Marl Sand and gravel
Heide's Sand and Gravel		Sand and gravel
Frank R. Hixon		Marl
Joseph Steck		Marl
John G. Yerington	NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec.10, T.5S.,R.16W.	Sand and gravel
CHARLEVOIX (79)		
Sand and gravel	59,815 tons	\$ 11,135
Charlevoix County Road Commission	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T.33N.,R.8W.) SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec.27, T.33N.,R.6W.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec.13, T.32N.,R.5W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 5, T.32N.,R.7W.) NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec.28, T.33N.,R.7W.)	Sand and gravel
CHEBOYGAN (70)		
Stone--crushed limestone, sand and gravel		\$ 68,930 (Includes Antrim County)
E. P. Brady and Company	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec.32, T.33N.,R.3W.	Sand and gravel
Hugh M. Mason		Sand and gravel
Ralph Tanner and Associates	SE $\frac{1}{4}$ Sec. 25, T.34N., R.2W.	Limestone

	Quantity	Value
CHIPPEWA (21)		
Stone--crushed dolomite (3rd), sand and gravel	(Combined with Mackinac Co.)	
Drummond Dolomite Incorporated I. L. Whitehead	Sec. 24, T. 42N., R. 5E.	Dolomite Sand and gravel
CLARE (35)		
Petroleum (12th, 3%)	431,058 bbls.	\$1,176,783
Natural gas (6th, 5%)	466,938 M. cu. ft.	72,842
Sand and gravel	10,000 tons	12,500
Total value		\$1,262,125
Fisher Sand and Gravel Company		Sand and gravel
CLINTON (56)		
Sand and gravel	211,236 tons	\$ 220,703
Boichot Concrete Products Corp.	NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 3, T. 5N., R. 2W. NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 27, T. 5N., R. 2W.	Sand and gravel
Clinton County Road Commission		Sand and gravel
H. L. Martin Gravel Co.		Sand and gravel
Harry Pickitt		Sand and gravel
Taber-Carmody	N $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 25, T. 8N., R. 2W.	Sand and gravel
Walling Gravel Co.	SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 34, T. 8N., R. 2W.	Sand and gravel
CRAWFORD (31)		
Petroleum (13th, 3%)	408,154 bbls.	\$1,114,260
Natural gasoline (1st, 55%)	3,013,952 gals.	301,395
Natural gas (3rd, 13%)	1,104,913 M. cu. ft.	172,366
Sand and gravel	37,240 tons	12,620
Total value		\$1,600,641
Crawford County Road Commission	NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 9, T. 25N., R. 3W. SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 27, T. 26N., R. 3W.	Sand and gravel Sand and gravel
Taber-Carmody		

	Quantity	Value
DELTA (60)		
Sand and gravel, stone--crushed limestone	(Combined with Menominee Co.)	
Bichler Brothers	SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 1, T. 39N., R. 23W.	Sand and gravel
E. P. Brady and Company		Limestone--crushed
Cloverland Milling and Supply Company		Sand and gravel
Days River Sand and Gravel Company		Sand and gravel
Delta County Road Commission	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 10, T. 37N., R. 24W. NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T. 38N., R. 24W. SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 19, T. 38N., R. 24W. NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 24, T. 40N., R. 2W. NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 28, T. 40N., R. 23W.	Sand and gravel
Escanaba and Lake Superior Railroad		Sand and gravel
Minneapolis, St. Paul and Sault Ste. Marie Railway		Sand and gravel
Van Enkevorts Brothers	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 8, T. 38N., R. 24W.	Sand and gravel
DICKINSON (48)		
Iron ore, stone--crushed limestone, sand and gravel		\$1,080,135 (Includes Baraga Co.)
Champion Incorporated	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 20, T. 39N., R. 28W. NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T. 40N., R. 30W.	Sand and gravel
Dickinson County Road Commission		Sand and gravel
Globe Iron Company-- Globe-Cornell (open pit)	Sec. 20, T. 40N., R. 30W.	Iron ore
Jackson Iron and Steel Company-- Bradley (open pit)	Sec. 25, T. 40N., R. 31W.	Iron ore
Superior Rock Products Company	SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 30, T. 42N., R. 29W. NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34, T. 42N., R. 30W. SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 35, T. 42N., R. 30W.	Dolomite, feldspar, mica schist-- crushed
The Metro-Nite Company	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 26, T. 42N., R. 28W.	Dolomite--crushed

	Quantity	Value
EATON (34)		
Clay products		\$1,000,046 est.
Stone--crushed and dimensional limestone (7th)	132,623 tons	244,425
Sand and gravel	162,514 tons	54,042
Shale* (3rd)		
Total value		<u>\$1,298,513</u>

American Vitriified Products Company	NE $\frac{1}{4}$ Sec. 10, T.4N., R.4W.	Shale--clay products (Limestone--crushed and dimensional)
F. G. Cheney Limestone Company	NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 20, T.1N., R.6W.	
Eaton County Road Commission	SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 5, T.1N., R.3W.) NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T.1N., R.5W.) SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 32, T.2N., R.3W.) SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 23, T.4N., R.6W.)	Sand and gravel
Grand Ledge Clay Products Company	SE $\frac{1}{4}$ Sec. 3, T.4N., R.4W.	Shale--clay products
West Shore Construction Co.	NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 18, T.1N., R.5W.	Sand and gravel

EMMET (18)

Portland cement (4th, 3%), stone--crushed limestone	(Combined with Manistee Co.)
Petoskey Portland Cement Company	Sec. 2, T.34N., R.6W. (Portland cement, limestone--crushed)

GENESEE (49)

Sand and gravel (11th, 3%)	695,876 tons	\$ 500,116
Petroleum	5,560 bbls.	<u>15,179</u>
Total value		\$ 515,295

E. P. Brady and Company		Sand and gravel
Hansen Gravel Company		Sand and gravel
Kurtz Gravel Company		Sand and gravel
A. S. Leffler Gravel Company		Sand and gravel
John Post and Sons	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 7, T.6N., R.5E.	Sand and gravel
Justus Snellenberger		Sand and gravel

*Value of shale used in manufacture of clay products not included in county total.

	Quantity	Value
GLADWIN (30)		
Petroleum (8th, 5%)	645,104 bbls.	\$ 1,761,134
Sand and gravel	33,711 tons	<u>16,115</u>
Total value		\$ 1,777,249

Gladwin County Highway Department	SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 26, T.18N., R.2W.	Sand and gravel
Harry Pickitt	NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11, T.18N., R.2W.	Sand and gravel

GOGEBIC (4)

Iron ore (3rd, 26%)	3,003,861 tons	\$23,060,611
Sand and gravel	153,677 tons	<u>161,447</u>
Total value		\$23,222,058

Concrete Products Company		Sand and gravel
Gogebic County Road Commission	SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 28, T.44N., R.39W.) S $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 13, T.45N., R.39W.) SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 8, T.48N., R.46W.)	Sand and gravel
Charles R. Hemkes Lake Superior Gravel Company	NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 31, T.48N., R.46W.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T.48N., R.46W.)	Sand and gravel
Oliver Iron Mining Division--Davis-Geneva Mine	Sec. 18, 19, T.47N., R.46W.	Iron ore
Pickands Mather & Co.--Anvil-Palms-Keweenaw Mine	Sec. 11, 14, T.47N., R.46W.)	Iron ore
Newport-Bonnie Mine	Sec. 24, T.47N., R.47W.)	
Peterson Mine	Sec. 16, 17, T.47N., R.46W.)	
Sunday Lake Mine	Sec. 9, 10, T.47N., R.45W.)	
Republic Steel Corporation--Penoque Group	Sec. 23, T.47N., R.47W.)	Iron ore

GRAND TRAVERSE

No production reported.

	Quantity	Value
GRATIOT (24)		
Salt (4th), magnesium compounds (4th), bromine (3rd), calcium-magnesium chloride (3rd), sand and gravel, clay products, natural gas (10th, 3%), clay*, petroleum		(Combined with Midland Co.)
Clay Products Company NE $\frac{1}{4}$ Sec. 25, T.12N., R.3W. Roy Dayringer		Clay--clay products Sand and gravel
Gratiot County Road NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 18, T.12N., R.4W.) Commission NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34, T.11N., R.4W.)		Sand and gravel (Bromine, calcium- (magnesium chloride, (magnesium compounds, (salt
Michigan Chemical Corporation St. Louis		
North Star Washed NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 22, T.10N., R.2W.) Sand and Gravel Co. NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34, T.11N., R.4W.)		Sand and gravel Sand and gravel
Taber-Carmody		
HILLSDALE (61)		
Sand and gravel	290,433 tons	\$125,031
Marl	4,800 tons	9,600
Total value		\$134,631
Barnes and Van Antwerp		Marl
Elliott Ice and Coal Company		Sand and gravel
Hillsdale County Road Commission NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 11, T.5S., R.3W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 9, T.6S., R.3W.) SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 5, T.7S., R.2W.) SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 25, T.7S., R.2W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 1, T.7S., R.4W.) SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 30, T.7S., R.4W.) NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23, T.8S., R.2W.)		Sand and gravel Sand and gravel Sand and gravel Sand and gravel Sand and gravel Marl
Hoover Brothers Virgil Kintigh Northwest Materials Incorporated		Sand and gravel

*Value of clay used in manufacture of clay products not included in county total.

	Quantity	Value
HOUGHTON (13)		
Copper (2nd, 44%)	19,395,760 lbs.	\$4,807,765
Stone--sandstone	56,000 tons	31,509
Sand and gravel	25 tons	50
Total value		\$4,839,324
Calumet and Hecla Incorporated-- Centennial Mine Sec. 18, T.56N., R.32W.) North Kearsarge Mine Sec. 5, T.56N., R.32W.) Osceola Mine Sec. 23, T.56N., R.33W.) Reclamation Sec. 12, T.55N., R.33W.)		Copper
Copper Range Company-- Champion Mine Sec. 31, T.54N., R.34W.)		Copper
Copper Range Railroad		Sand and gravel
Houghton County Road SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 17, T.53N., R.35W.) Commission NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 5, T.56N., R.32W.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 12, T.56N., R.33W.)		Sandstone, trap rock
Quincy Mining Company-- Reclamation Sec. 23, T.55N., R.33W.)		Copper
HURON (46)		
Stone--crushed and dimensional limestone (6th), sand and gravel, petroleum		(Combined with Saginaw Co.)
Huron County Road Commission SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 17, T.16N., R.13E.		Sand and gravel (Limestone--crushed (and dimensional
The Wallace Stone Company Sec. 5, T.16N., R.10E.)		
INGHAM (65)		
Sand and gravel	143,641 tons	\$ 123,674
Lansing City Engineer		Sand and gravel
The Ferris Company		Sand and gravel
Harry Pickitt		Sand and gravel
Ray Sablain SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 2, T.3N., R.2W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 27, T.4N., R.2W.)		Sand and gravel

	Quantity	Value
IONIA (58)		
Sand and gravel	179,908 tons	\$ 121,436
Petroleum	28,077 bbls.	<u>76,650</u>
Total value		\$ 198,086

Edward Light		Sand and gravel
H. L. Martin Gravel Company		Sand and gravel
Harry Pickitt	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 16, T.7N., R.5W.)	Sand and gravel
	NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 21, T.7N., R.6W.)	Sand and gravel
John G. Yerington	SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 16, T.6N., R.8W.	Sand and gravel

IOSCO (19)

Gypsum (1st)	(Combined with Lapeer Co.)	
National Gypsum Company	Sec. 16, T.21N., R.6E.	Gypsum
United States Gypsum Company	Sec. 27, T.21N., R.7E.	Gypsum

IRON (2)

Iron ore (2nd, 35%)	4,176,600 tons	\$27,174,737
Sand and gravel	4,060 tons	<u>2,968</u>
Total value		\$27,177,705

Champion Incorporated	NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1, T.43N., R.36W.	Sand and gravel
The Cleveland-Cliffs Iron Company--		
Cannon Mine	Sec. 36, T.43N., R.35W.	
Hiawatha Mine	Sec. 35, 36, T.43N., R.35W.)	
Homer-Cardiff-Minckler Mine	Sec. 22, 23, T.43N., R.35W.)	Iron ore
Spies-Virgil Mine	Sec. 24, T.43N., R.35W.)	
Wauseca-Aronson Mine	Sec. 23, T.43N., R.35W.)	
Inland Steel Company--		
Bristol-Youngstown Mine	Secs. 19, 20, T.43N., R.32W.)	Iron ore
Sherwood Mine	Sec. 23, T.43N., R.35W.)	
Ironwood City Highway Department		Sand and gravel
North Range Mining Company--		Iron ore
Book Mine	Sec. 12, T.42N., R.33W.)	
Warner Mine	Sec. 9, T.44N., R.33W.)	

	Quantity	Value
Iron County (cont)		
Pickands Mather and Company--		
Baltic Group	Secs. 6, 7, T.42N., R.34W.	
Fortune Lake Mine	Secs. 24, 25, 26, T.43N., R.33W.)	Iron ore
Lawrence Mine	Sec. 36, T.43N., R.33W.)	
Volunteer-Maitland Mine	(Sec. 30, T.47N., R.26W.) (Sec. 25, T.47N., R.27W.)	
Republic Steel Corporation--		
Monongahela Mine	Sec. 36, T.43N., R.33W.)	Iron ore
Tobin-Columbia Mine	Secs. 30, 31, T.43N., R.32W.)	

ISABELLA (15)

Petroleum (2nd, 12%)	1,630,653 bbls.	\$4,451,689
Natural gas (2nd, 13%)	1,150,314 M.cu.ft.	179,449
Undistributed: Natural gasoline (4th), sand and gravel		<u>193,459</u>
Total value		\$4,824,597

Denslow & Denslow	Sand and gravel
C. Utterback	Sand and gravel

JACKSON (54)

Sand and gravel	354,171 tons	\$ 201,062
Stone--crushed limestone and sandstone	39,268 tons	80,926
Marl	5,875 tons	<u>9,400</u>
Total value		\$ 291,388

Barnes and Van Antwerp		Marl
Jackson County Road Commission	SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 29, T.1S., R.1W.	Sand and gravel
John C. Jeffery	SE $\frac{1}{4}$ Sec. 30, T.2S., R.2W.	Limestone--crushed
Klumpp Brothers Gravel Company		Sand and gravel
Edward Palmer and Son		Sand and gravel
Harry Pickitt		Sand and gravel
Ray Sandstone Quarry	NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 6, T.4S., R.2E.	(Sandstone-- (dimensional
Sager Concrete Products		Sand and gravel
Star Sandstone Company	SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 31, T.3S., R.2E.	(Sandstone-- (dimensional

	Quantity	Value
KALAMAZOO (47)		
Sand and gravel (9th, 3%)	813,268 tons	\$558,320
Marl	7,500 tons	6,000
Peat	300 tons	4,856
Petroleum	834 bbls.	2,277
Total value		<u>\$571,453</u>

American Aggregate Corporation	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 15, T.1S., R.11W.	Sand and gravel
Amos G. Baker		Sand and gravel
Craven's Peat Moss		Peat
Gravel Producers Incorporated		Sand and gravel
Kalamazoo County Road Commission	NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 34, T.1S., R.11W.	Sand and gravel
Albert Peters		Sand and gravel
Harry Pickitt		Sand and gravel
Dan Slack		Marl
John G. Yerington		Sand and gravel

KALKASKA (52)

Petroleum	103,323 bbls.	\$282,072
Natural gasoline (2nd, 14%)	753,488 gals.	75,349
Natural gas (9th, 4%)	302,121 M.cu.ft.	47,131
Sand and gravel	17,115 tons	6,441
Total value		<u>\$410,993</u>

Kalkaska County Road Commission		Sand and gravel
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KENT (27)

Sand and gravel (6th, 5%)	1,252,324 tons	\$664,471
Natural gas	33,727 M.cu.ft.	5,261
Marl	4,000 tons	4,400
Undistributed: Gypsum (2nd), petroleum		<u>1,278,608</u>
Total value		<u>\$1,952,740</u>

Certain-Teed Products Corporation	Grand Rapids	Gypsum
Ed DeVries and Sons		Sand and gravel
Gilbert Geers		Sand and gravel
Grande Brick Company		Sand and gravel
Grand Rapids Gravel Company	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 3, T.6N., R.12W.) NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 9, T.6N., R.12W.)	Sand and gravel

	Quantity	Value
Kent County (cont)		
Grand Rapids Plaster Company	Grand Rapids	Gypsum
Harry H. Olthouse		Marl
Pekaar and Van Doorn		Sand and gravel
United States Gypsum Company	Grand Rapids	Gypsum products
West Shore Construction Company		Sand and gravel
Harry Zeeff and Sons Gravel Company	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T.7N., R.12W.	Sand and gravel

KEWEENAW (14)

Copper (1st, 54%)	23,657,231 lbs.	\$5,825,593
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Calumet and Hecla Incorporated--		Copper
Ahmeek & Allouez	Sec. 28, T.57N., R.32W.)	
Allouez No. 3	Sec. 32, T.57N., R.32W.)	
Douglass	Sec. 28, T.57N., R.32W.)	
Iroquois	Sec. 22, T.57N., R.32W.)	
Peninsula	Sec. 28, T.57N., R.32W.)	
Seneca No. 2	Sec. 27, T.57N., R.32W.)	

LAKE (67)

Petroleum	32,577 bbls.	\$ 88,915
Sand and gravel	36,114 tons	<u>10,052</u>
Total value		\$ 98,967

Lake County Road Commission	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 23, T.18N., R.13W.) NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 10, T.20N., R.14W.)	Sand and gravel
Harry Pickitt		Sand and gravel

LAPEER (51)

Peat (1st), sand and gravel	\$3,798,873
	(Includes Iosco Co.)

Green Thumb Peat Humus Company	Sec. 24, T.7N., R.12E.	Peat
Lapeer County Road Commission		Sand and gravel
Michigan Peat Incorporated	Sec. 24, T.7N., R.12E.	Peat

	<u>Quantity</u>	<u>Value</u>
LEELANAU (78)		
Sand and gravel	38,099 tons	\$ 13,964
Leelanau County Road Commission	Sand and gravel	
LENAWEE (25)		
Sand and gravel	256,647 tons	\$ 151,936
Undistributed: Portland cement (5th), clay products, clay*		<u>2,219,469</u>
Total value		\$2,371,405
E. P. Brady and Company	Sand and gravel	
Donald F. Clark	Sand and gravel	
Comfort Brick and Tile Company	SW $\frac{1}{4}$ Sec. 2, T.6S., R.5E.	Tile
Consolidated Cement Corporation	NE $\frac{1}{4}$ Sec. 5, T.5S., R.1E.	Portland cement
Lenawee County Road Commission	Sand and gravel	
Stamm Brothers Gravel Company	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T.7S., R.3E.	Sand and gravel
Tecumseh Gravel Company	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 4, T.6S., R.4E.	Sand and gravel
LIVINGSTON (22)		
Sand and gravel (2nd, 9%)	2,397,989 tons	\$2,356,934
Natural gas (1st, 21%)	2,624,508 M.cu.ft.	<u>409,423</u>
Total value		\$2,766,357
American Aggregate Corporation	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 11, T.1N., R.6E.	Sand and gravel
E. P. Brady and Company	Sand and gravel	
Van E. Dailey	Sand and gravel	
Morehouse Orchards	Sand and gravel	

*Value of clay used in manufacture of Portland cement and clay products not included in county total.

	<u>Quantity</u>	<u>Value</u>
LUCE (74)		
Sand and gravel	29,120 tons	\$ 27,281
Luce County Road Commission	Sand and gravel	
MACKINAC (23)		
Stone--crushed limestone (2nd), sand and gravel		\$5,720,752 (Includes Chippewa Co.)
Inland Lime and Stone Company	Sec. 6, T.42N., R.12W.	Limestone--crushed
D.S.S. and A. Railroad Company	NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 7, T.40N., R.3W.	Sand and gravel
MACOMB (38)		
Sand and gravel (4th, 5%)	1,373,420 tons	\$1,091,899
Advance Building Materials Company	NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 8, T.4N., R.12E.	Sand and gravel
Daniel J. Bollig	Sand and gravel	
Macomb County Road Commission	Sec. 17, T.4N., R.12E.	Sand and gravel
Macomb Sand and Gravel Company	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 30, T.3N., R.12E.	Sand and gravel
Maertens Sand and Gravel Company	Sand and gravel	
Louis Marsack and Sons	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 3, T.1N., R.13E.	Sand and gravel
Michigan Sand and Gravel	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T.3N., R.12E.	Sand and gravel
Morgan Sand and Gravel Company	Sand and gravel	
John R. Sand and Gravel Company	SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 30, T.3N., R.12E.	Sand and gravel
Ray Industries, Incorporated	NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 18, T.3N., R.12E.	Sand and gravel
Sargent Sand Company	Sand	
Underwood Sand and Gravel Company	Sand and gravel	

	Quantity	Value
MANISTEE (9)		
Salt (3rd, magnesium compounds (2nd), bromine (2nd), sand and gravel		\$10,380,657
	(Includes Emmet Co.)	
Great Lakes Chemical Corporation	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 18, T.21N.,R.16W.	Bromine
Manistee County Road Commission		Sand and gravel
Manistee Salt Works	SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 18, T.21N.,R.16W.	Salt
Michigan Chemical Corporation	NW $\frac{1}{4}$ Sec. 7, T.21N., R.16W.	Bromine
Morton Salt Company	Sec. 12, T.21N., R.17W.	(Bromine, magnesium compounds)
Morton Salt Company Sand Products Corporation	Sec. 12, T.21N., R.17W.	Salt
Standard Lime and Stone Company	N $\frac{1}{2}$ Sec. 11, T.21N., R.17W.	Sand
	SE $\frac{1}{4}$ Sec. 18, T.21N., R.16W.	Magnesium compounds

MARQUETTE (1)

Iron ore (1st, 38%)	4,516,509 tons	\$32,898,032
Sand and gravel	264,991 tons	229,845
Total value		\$33,127,877

E. P. Brady and Company		Sand and gravel
Champion Incorporated	NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 26, T.48N.,R.30W.	Sand and gravel
The Cleveland-Cliffs Iron Company--)
Athens-Bunker Hill Mine	Sec. 6, T.47N., R.26W.)
Cambria-Jackson Mine	Secs. 35, 36, T.48N., R.27W.)
Cliffs Shaft Mine	Secs. 3, 9, 10, T.47N., R.27W.)	Iron ore
Humboldt open pit	Secs. 10-15, T.47N., R.29W.)
Lloyd-East Lloyd Mine	Sec. 6, T.47N., R.27W.)
Maas-Race Course Mine	Sec. 31, T.48N., R.26W.)
Mather "A" Mine	Sec. 2, T.47N., R.27W.)
Mather "B" Mine	Sec. 1, T.47N., R.27W.)
Republic open pit	Sec. 7, T.46N., R.29W.)
Tilden open pit	Sec. 26, T.47N., R.27W.))
M. A. Hanna Company--)
New Richmond open pit	Sec. 27, T.47N., R.26W.)	Iron ore
Inland Steel Company--)
Morris Mine	Secs. 1, 2, T.47N., R.28W.)	Iron ore
Greenwood Mine	Secs. 14, 23, T.47N., R.28W.))

	Quantity	Value
Marquette County (cont)		
Jones & Laughlin Steel Corporation--)
Tracy Mine	Secs. 7, 8, T.47N., R.26W.)	Iron ore
Lake Superior and Ishpeming Railway Co.		Sand and gravel
A. Lindberg and Sons, Incorporated	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 5, T.47N., R.26W.	Sand and gravel
Marquette County Road Commission		Sand and gravel
Roy Millimaki		Sand and gravel
North Range Mining Company--)
Blueberry Mine	Secs. 3, 4, T.47N., R.28W.)	Iron ore
Champion Mine	Sec. 31, T.48N., R.29W.))
Pickands Mather and Company--)
Volunteer-Maitland open pit	Secs. 25, 30, T.47N., R.26W.)	Iron ore

MASON (11)

Magnesium compounds (1st), lime (1st), calcium-magnesium chloride (2nd), petroleum, sand and gravel, bromine, peat	(Combined with Osceola Co.)
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The Dow Chemical Company	NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23, T.18N.,R.18W.	(Bromine, calcium-magnesium chloride, magnesium compounds)
The Dow Chemical Company	Ludington	Lime
Mason County Road Commission	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11, T.18N.,R.15W.	Sand and gravel
Irving L. Pratt and Son		Peat
Sargent Sand Company	Sec. 33, T.19N., R.18W.	Sand

MECOSTA (40)

Petroleum	300,500 bbls.	\$820,365
Natural gas (5th, 7%)	568,339 M.Cu.ft.	88,661
Marl	10,809 tons	8,237
Sand and gravel	59,808 tons	6,574
Total value		\$923,837

Leon Burr		Marl
Lake Superior and Ishpeming Railway Co.		Sand and gravel
Mecosta County Road Commission	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 32, T.15N., R.9W.	Sand and gravel
Leo W. Speese		Marl
L. Truman and Son		Marl

	Quantity	Value
MENOMINEE (45)		
Lime (2nd), sand and gravel		\$ 862,951
	(Includes Delta Co.)	
Limestone Products		
Company	Menominee	Lime
Menominee County Road Commission	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 9, T.39N., R.25W.	Sand and gravel
MIDLAND (5)		
Bromine (1st), calcium-magnesium chloride (1st), magnesium compounds (3rd), petroleum (9th, 4%), salt, potash (1st), natural gas, natural gasoline		\$24,187,347
	(Includes Gratiot Co.)	
The Dow Chemical Company	Midland	(Bromine, calcium-magnesium chloride, (magnesium compounds, (potash
MISSAUKEE (28)		
Petroleum (7th, 5%)	656,229 bbls.	\$ 1,791,505
Natural gas	217,826 M.cu.ft.	33,981
Sand and gravel	20,160 tons	10,080
Marl	2,098 tons	2,768
Total value		\$ 1,838,334
C. Stanley Hooker		Marl
Taber-Carmody		Sand and gravel
MONROE (42)		
Stone--crushed dolomite (5th), clay products, petroleum, clay*		\$ 859,889
The France Stone Co.	SE $\frac{1}{4}$ Sec. 7, T.7S., R.9E.	Dolomite, crushed
Michigan Stone Co.	SW $\frac{1}{4}$ Sec. 25, T.8S., R.6E.	Dolomite, crushed
Monroe County Road Commission	SW $\frac{1}{4}$ Sec. 13, T.6S., R.7E.	Dolomite, crushed
F. W. Ritter Sons Company, Inc.	NW $\frac{1}{4}$ Sec. 21, T.5S., R.10E.	Pottery

*Value of clay used in manufacture of clay products not included in county total.

	Quantity	Value
MONTCALM (36)		
Petroleum (15th, 3%)	358,646 bbls.	\$ 979,104
Sand and gravel	300,939 tons	141,318
Natural gas (7th, 5%)	462,299 M.cu.ft.	72,119
Marl	11,204 tons	8,395
Total value		\$1,200,936
A. L. Dyer and Sons	SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 8, T.12N., R.5W.	Sand and gravel
Montcalm County Road Commission		Sand and gravel
Leo W. Speese		Marl
Frank H. Stoerk		Sand and gravel
Taber-Carmody		Sand and gravel
West Shore Construction Company		Sand and gravel
John G. Yerington		Sand and gravel
MONTMORENCY (73)		
Sand and gravel	39,293 tons	\$ 26,767
Petroleum	1,013 bbls.	2,765
Total value		\$ 29,532
E. P. Brady and Company		Sand and gravel
Montmorency County Road Commission	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 27, T.30N., R.1E.	Sand and gravel
MUSKEGON (44)		
Sand and gravel (8th, 3%)	845,828 tons	\$ 642,660
Petroleum	38,357 bbls.	104,745
Natural gas	215,141 M.cu.ft.	33,562
Marl	4,606 tons	5,159
Total value		\$ 786,126
Bunce Gravel		Sand and gravel
Nugent Sand Company		Sand
Harold Osborn		Marl
Sand Products Corporation		Sand
West Shore Construction Company		Sand and gravel

	Quantity	Value
NEWAYGO (32)		
Petroleum (11th, 4%)	476,516 bbls.	\$1,300,889
Natural gasoline (3rd, 13%)	697,629 gals.	69,763
Natural gas (8th, 4%)	320,347 M.cu.ft.	49,974
Marl	4,493 tons	4,016
Total value		\$1,424,642

Leon Burr Marl
 Leo W. Speese Marl

OAKLAND (16)		
Sand and gravel (1st, 18%)	4,793,193 tons	\$4,423,125

American Aggregate Corporation
 NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 22, T.5N., R.10E. Sand and gravel
 Floyd Beardslee SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2, T.2N., R.10E.)
 NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 11, T.2N., R.10E.) Sand and gravel
 SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2, T.2N., R.10E.)
 M. J. Bowers Sand and gravel
 Glenn Comstock Sand and gravel
 Foley and Beardslee NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 7, T.3N., R.9E.)
 SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 36, T.4N., R.8E.) Sand and gravel
 John R. Sand and Gravel Company Sand and gravel
 Koenig Coal and Supply Company SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 24, T.5N., R.10E. Sand and gravel
 McLane Brothers Sand and Gravel Sand and gravel
 Mickelson Brothers NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 21, T.3N., R.8E. Sand and gravel
 Oakland County Road Commission Sand and gravel
 Oakland Sand and Gravel Company Sand and gravel
 Slaters Sand and Gravel SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 36, T.4N., R.10E. Sand and gravel
 P. O. Underwood and L. A. Berry Sand and gravel
 Lyle J. Walker Sand and Gravel NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34, T.2N., R. 7E.)
 SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 21, T.2N., R.11E.) Sand and gravel
 F. S. Ward NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 26, T.5N., R.10E. Sand and gravel

OCEANA (17)		
Petroleum (3rd, 10%)	1,377,292 bbls.	\$3,760,007
Natural gas	169,086 M.cu.ft.	26,377
Natural gasoline (6th, 1%)	79,057 gals.	7,906
Marl	3,125 tons	3,000
Total value		\$3,797,290

Bechman Brothers Marl

	Quantity	Value
OGEMAW (26)		
Petroleum (6th, 6%)	730,178 bbls.	\$1,993,386
Sand and gravel	124,273 tons	45,613
Marl	625 tons	875
Total value		\$2,039,874

Dan Dunn Marl
 Ehinger Brothers Marl
 Ehinger Brothers Sand and gravel
 Ogemaw County Road Commission Sand and gravel
 Harry Pickitt Sand and gravel
 Ed. Reetz NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 35, T.23N., R.2E. Sand and gravel
 Walter Rosevear Pit NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 6, T.22N., R.2E. Sand and gravel
 Taber-Carmody Sand and gravel

ONTONAGON (59)	
Copper, sand and gravel	\$ 197,000

Richard Francis Sand and gravel
 Ontonagon County Road Commission Sand and gravel
 Robinson Clay Products Company Sec. 17, T.50N., R.39W. Clay
 White Pine Copper Company--)
 White Pine Mine Secs. 4, 5, 9, T.50N., R.42W.) Copper

OSCEOLA (20)	
Petroleum (4th, 8%), sand and gravel, natural gas (4th, 7%), marl	\$8,944,077 (Includes Mason Co.)

Hersey Gravel Company NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 20, T.17N., R.9W. Sand and gravel
 C. Stanley Hooker Marl

OSCODA (81)	
Petroleum	1,876 bbls. \$ 5,121

	Quantity	Value
OTSEGO (71)		
Sand and gravel	71,071 tons	\$ 36,426
Petroleum	2,315 bbls.	6,320
Natural gas	13,871 M.cu.ft.	2,164
Total value		\$ 44,910
Hutchins Sand and Gravel Company Otsego County Road Commission	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17, T.29N., R.3W.	Sand and gravel Sand and gravel
OTTAWA (29)		
Sand and gravel (3rd, 7%)	1,841,232 tons	\$1,511,678
Petroleum	95,682 bbls.	261,212
Marl	3,625 tons	5,715
Natural gas	22,485 M.cu.ft.	3,508
Total value		\$1,782,113
Bunce Gravel Construction Aggregate Corporation Thomas F. Johnston Bernard C. Knauf Ralph Meyers Standard Sand Company Wierenga Brothers	NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T.9N., R.13W. SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16, T.8N., R.15W. NW $\frac{1}{4}$ Sec. 4, T.7N., R.16W.	Sand and gravel Sand and gravel Sand and gravel Marl Marl Sand Marl
PRESQUE ISLE (8)		
Stone--crushed limestone (1st), sand and gravel		\$25,397,166 (Includes Alpena Co.)
E. P. Brady and Company Michigan Limestone Div., U.S. Steel Corp. Onaway Stone Company	Sec. 23, T.35N., R.5E. Sec. 5, T.34N., R.2E.	Sand and gravel Limestone, crushed Limestone, dimensional
ROSCOMMON (33)		
Petroleum (10th, 4%) Natural gas	506,623 bbls. 29,630 M.cu.ft.	\$1,383,081 4,622
Total value		\$1,387,703

	Quantity	Value
SAGINAW (66)		
Clay* (2nd), petroleum, coal, sand and gravel		\$ 690,880 (Includes Huron Co.)
Minco Products Corporation Saginaw Brick Company Swan Creek Coal Mine**	NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1, T.11N., R.3E. Sec. 21, T.11N., R.3E.	Clay Sand Coal
SANILAC (69)		
Sand and gravel	218,104 tons	\$ 65,554
Hoadley and McLeod Sanilac County Road Commission	NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 17, T.19N., R.12E.	Sand and gravel Sand and gravel
SCHOOLCRAFT (75)		
Sand and gravel	27,154 tons	\$ 20,114
Schoolcraft County Road Commission		Sand and gravel
SHIAWASSEE (43)		
Clay products, sand and gravel, shale*, peat		(Combined with St. Clair Co.)
Clyde Benjamin E.P. Brady and Company Harry Fauss The Michigan Vitriified Tile Company Perry Peat Company, Incorporated Shenk Gravel Company	SE $\frac{1}{4}$ Sec. 22, T.7N., R.3E. NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 2, T.6N., R.4E.) NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 2, T.6N., R.4E.)	Sand and gravel Sand and gravel Sand and gravel Tile Peat Sand and gravel
*Value of clay or shale used in manufacture of Portland cement and clay products not included in county total.		
**Abandoned April, 1952.		

	Quantity	Value
ST. CLAIR (7)		
Salt (2nd), Portland cement (6th), clay* (3rd), sand and gravel		\$8,859,562 (Includes Shiawassee Co.)
The General Foods Corporation	St. Clair	Evaporated salt
Morton Salt Company	Maryville	Evaporated salt
Peerless Cement Corporation	Port Huron	Portland cement
Port Huron City Engineer		Sand and gravel

ST. JOSEPH (68)

Sand and gravel	105,023 tons	\$ 65,273
Marl	8,303 tons	6,526
Total value		\$ 71,799

William Case		Marl
Leslie Knox		Marl
Harry Pickitt		Sand and gravel
Reed and Wood		Marl
St. Joseph County Road Commission		Sand and gravel
West Shore Construction Company		Sand and gravel
White Pigeon Gravel Company	NE $\frac{1}{4}$ Sec. 7, T.8S., R.11W.	Sand and gravel

TUSCOLA (39)

Sand and gravel (10th, 3%)	783,960 tons	\$ 850,003
Petroleum	53,512 bbls.	146,088
Calcium-magnesium chloride		75,000
Total value		\$1,071,091

Anderson Sand and Gravel Company	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 20, T.11N., R.9E.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 19, T.11N., R.9E.)	Sand and gravel
Benthal Sand and Gravel	SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 6, T.11N., R.9E.	Sand and gravel
Great Lakes Foundry Sand Company		Sand

*Value of clay or shale used in manufacture of Portland cement and clay products not included in county total.

	Quantity	Value
Tuscola County (cont)		
C. R. Hunt		Sand and gravel
Sargent Sand Company		Sand
E. L. Schwaderer	SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 33, T.14N., R.11E.) NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33, T.12N., R.10E.) NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 36, T.12N., R.11E.) NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 16, T.13N., R.10E.) NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34, T.14N., R.11E.)	Sand and gravel
Tuscola County Road Commission		Sand and gravel
Wilkinson Chemical Company		(Calcium-magnesium chloride)

VAN BUREN (53)

Petroleum	105,598 bbls.	\$ 288,283
Sand and gravel	120,414 tons	66,638
Total value		\$ 354,921

James B. Michell		Sand and gravel
John G. Yerington	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33, T.4S., R.15W.) SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 12, T.3S., R.15W.) SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 11, T.3S., R.15W.)	Sand and gravel

WASHTENAW (41)

Sand and gravel (7th, 4%)	1,093,416 tons	\$ 834,795
Natural gas	13,683 M.cu.ft.	2,135
Total value		\$ 836,930

E. S. Albertson		Sand and gravel
E.P. Brady and Company		Sand and gravel
Chubb Sand and Gravel		Sand and gravel
Killins Gravel Company	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 25, T.2S., R.3E.	Sand and gravel
Harry Pickitt		Sand and gravel
Salem Gravel and Construction Co., Inc.		Sand and gravel
Washtenaw County Road Commission		Sand and gravel
Whittaker and Gooding Company	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19, T.2S., R.7E.	Sand and gravel
Youngs Sand and Gravel Company	SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16, T.1S., R.3E.	Sand and gravel

	Quantity	Value
WAYNE (3)		
Salt (1st, 42%)	3,543,492 tons	\$ 9,798,795
Sand and gravel (5th, 5%)	1,313,534 tons	2,028,436
Undistributed: Portland cement (2nd), clay products, clay* (1st)		<u>11,460,853</u>
Total value		\$ 23,288,084

Allied Chemical and Dye Corporation	Trenton	(Chlorine, soda ash, caustic soda, etc.)
Clippert Brick Co.	NW $\frac{1}{4}$ Sec. 21, T.2S., R.11E.	Brick
Daniel Brick Company	SE $\frac{1}{4}$ Sec. 21, T.3S., R.10E.	Brick
W. L. Emery Company		Sand and gravel
Flat Rock Clay Products Company	NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 30, T.4S., R.10E.	Tile
International Salt Company, Inc.	SW $\frac{1}{4}$ Sec. 32, T.2S., R.11E.	Rock salt
Lightweight Aggregate Corporation	NE $\frac{1}{4}$ Sec. 27, T.2S., R.11E.	Lightweight aggregate
Manning and Locklin Gravel Company	NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 2, T.1S., R.8E.	Sand and gravel
Michigan Silica Co.	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15, T.3N., R.10E.	Silica sand
Northville Sand and Gravel Company	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 8, T.1S., R.8E.	Sand and gravel
Peerless Cement Corp.	Detroit	Portland cement
Pennsylvania Salt Manufacturing Co.	Wyandotte	(Chlorine, caustic soda)
Harry Pickitt	SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 8, T.1S., R.8E.	Sand and gravel
United States Gypsum Company	River Rouge	Gypsum products
Wyandotte Chemical Corporation	Wyandotte	(Soda ash, chlorine, caustic soda, etc.)
Wyandotte Chemical Corporation	Wyandotte	Portland cement

WEXFORD (80)

Petroleum	3,515 bbls.	\$ 9,596
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UNDISTRIBUTED

Sand and gravel	1,421,357 tons	\$ 762,875
Kelley Island Lime and Transport Company	Sand	
Ronald Weaver	Sand and gravel	

TOTAL STATE VALUE

\$267,089,423

*Value of clay used in manufacture of clay products or Portland cement not included in county total.

DIRECTORY OF PRODUCERS OF MINERALS
and
MINERAL PRODUCTS, 1952

CHEMICAL PLANTS

(Using Natural Brine or Salt)

Name and Address	Raw Material	Plant Location
Allied Chemical & Dye Corp. The Solvay Process Division P. O. Box 271 Syracuse 1 New York	Salt	Detroit, Wayne Co.
The Dow Chemical Company Midland, Michigan	Natural brine and salt	Midland, Midland Co. Ludington, Mason Co.
Great Lakes Chemical Corp. 502 Michigan National Bank Building Grand Rapids 2 Michigan	Natural brine	Filer City, Manistee Co.
Michigan Chemical Corporation 500 North Bankson St. Louis, Michigan	Natural brine	St. Louis, Gratiot Co. East Lake, Manistee Co.
Morton Salt Company 120 South La Salle Street Chicago, Illinois	Natural brine	Manistee, Manistee Co.
Pennsylvania Salt Manufacturing Company 1000 Widener Building Philadelphia 7 Pennsylvania	Salt	Wyandotte, Wayne Co.
Standard Lime & Stone Company 2000 First National Bank Building Baltimore 3 Maryland	Natural brine	Stronack, Manistee Co.
Wyandotte Chemical Corp. Wyandotte, Michigan	Salt	Wyandotte, Wayne Co.

PRODUCERS OF BROMINE, CALCIUM-MAGNESIUM CHLORIDE,
MAGNESIUM COMPOUNDS AND POTASH

(From Well Brines)

	Bromine	Calcium- magnesium Chloride	Magnesium Compounds	Potash	
Dow Chemical Company	X	X	X		Mason
Dow Chemical Company	X	X	X	X	Midland
Great Lakes Chemical Corp.	X				Manistee
Michigan Chemical Corp.	X	X	X		Gratiot
Michigan Chemical Corp.	X				Manistee
Morton Salt Company	X		X		Manistee
Standard Lime & Stone Company			X		Manistee
Wilkinson Chemical Company		X			Tuscola

CEMENT MANUFACTURERS

<u>Name and Address</u>	<u>Plant Location</u>
Aetna Portland Cement Company P. O. Box 392 Bay City, Michigan	Bay City, Bay Co.
Consolidated Cement Corporation 1003 National Bank Building Jackson, Michigan	Cement City, Lenawee Co.
Huron Portland Cement Company 1325 Ford Building Detroit, Michigan	Alpena, Alpena Co.
Peerless Cement Corporation 1144 Free Press Building Detroit 26 Michigan	Detroit, Wayne Co. Port Huron, St. Clair Co.
Petoskey Portland Cement Company 438 East Lake Street Petoskey, Michigan	Petoskey, Emmet Co.
Wyandotte Chemical Corporation Wyandotte, Michigan (Operated by Huron Portland Cement Company.)	Wyandotte, Wayne Co.

CLAY PRODUCERS*

<u>Name and Address</u>	<u>Pit Location</u>
Minco Products Corporation Box 367 2305 Miller Road South Saginaw, Michigan	Near Paines, Saginaw Co. Section 1, T.11N., R.3E.
Robinson Clay Products Company 65 West State Street Akron 9 Ohio	Near Rockland, Ontonagon Co. Section 17, T.50N., R.39W.
Saginaw Clay Products Box 275 Saginaw, Michigan	Near Paines, Saginaw Co. Section 1, T.11N., R.3E.

*Producers of clay used in clay products, Portland cement, and lightweight aggregate manufacturers not included.

CLAY PRODUCTS PRODUCERS
(Brick, Tile, Pottery, Lightweight Aggregate)

<u>Name and address</u>	<u>Raw Material</u>	<u>Plant Location</u>
American Vitriified Products Co. 701 National City Bank Building Cleveland, Ohio	Shale	Grand Ledge, Eaton Co. (Tile)
Clay Products Company R.F.D. No. 2 St. Louis, Michigan	Clay	St. Louis, Gratiot Co. (Tile)
Clippert Brick Company Wyoming and Southern Avenues Detroit 10 Michigan	Clay	Near Dearborn, Wayne Co. (Brick)
Comfort Brick and Tile Company R.F.D. No. 1 Tecumseh, Michigan	Clay	Tecumseh, Lenawee Co. (Tile)
Daniel Brick Company Main P.O. Box 209 Dearborn, Michigan	Clay	Dearborn, Wayne Co. (Brick)
Flat Rock Clay Products Company Flat Rock 3 Michigan	Clay	Flat Rock, Wayne Co. (Tile)
Grand Ledge Clay Products Co. West Jefferson Street Grand Ledge, Michigan	Shale	Grand Ledge, Eaton Co. (Tile)
Lightweight Aggregate Corp. 12601 Merriman Road Livonia, Michigan	Clay	Livonia, Wayne Co. (Lightweight aggregate)
The Michigan Vitriified Tile Co. P. O. Box 59 Findlay, Ohio	Shale	Corunna, Shiawassee Co. (Tile)
Natco Corporation 327 Fifth Avenue Pittsburgh 22 Pennsylvania	Clay	Franklin, Oakland Co. (Tile)
F. W. Ritter Sons Company, Inc. South Rockwood, Michigan	Clay	South Rockwood, Monroe Co. (Pottery)

GYPSUM PRODUCERS

<u>Name and Address</u>	<u>Mine or Quarry Location</u>	<u>Mill Location</u>
Certain-Teed Products Corporation 120 East Lancaster Avenue Ardmore, Pennsylvania	Grand Rapids, Kent Co. (mine)	Grand Rapids, Kent Co.
Grand Rapids Plaster Company 1204 Peoples National Bank Bldg. Grand Rapids 2 Michigan	Grand Rapids, Kent Co. (mine)	Grand Rapids, Kent Co.
National Gypsum Company 325 Delaware Avenue Buffalo 2 New York	National City, Iosco Co. (quarry)	National City, Iosco Co.
United States Gypsum Company 300 West Adams Street Chicago 6 Illinois	Alabaster, Iosco Co. (quarry)	Grand Rapids, Kent Co. River Rouge, Wayne Co.

LIME PRODUCERS

<u>Name and Address</u>	<u>Plant Location</u>
The Dow Chemical Company Ludington Division Midland, Michigan	Ludington, Mason Co.
Limestone Products Company 320 First Street Menominee, Michigan	Menominee, Menominee Co.
Monitor Sugar Company Division Robert Gage Coal Company South Euclid Avenue Bay City, Michigan	Bay City, Bay Co.

IRON MINING COMPANIES

<u>Name and Address</u>	<u>Mine Locations (Counties)</u>
The Cleveland-Cliffs Iron Company 14th Floor Union Commerce Building Cleveland 14 Ohio	Baraga, Iron, Marquette
Globe Iron Company Jackson, Ohio	Dickinson
M. A. Hanna Company 1300 Leader Building Cleveland 14 Ohio	Iron and Marquette
Inland Steel Company 38 South Dearborn Street Chicago 3 Illinois	Iron and Marquette
Jackson Iron and Steel Company Jackson, Ohio	Dickinson
Jones and Laughlin Steel Corporation 401 Liberty Avenue Gateway Center Pittsburgh 30 Pennsylvania	Marquette
North Range Mining Company Negaunee, Michigan	Iron and Marquette
Oliver Iron Mining Division U. S. Steel Corporation Wolvin Building Duluth 2 Minnesota	Gogebic
Pickands Mather and Company 2000 Union Commerce Building Cleveland 14 Ohio	Gogebic, Iron, Marquette
Republic Steel Corporation Republic Building Cleveland 1 Ohio	Gogebic and Iron
Zontelli Brothers, Incorporated Ironton, Minnesota	Gogebic

COPPER PRODUCERS

<u>Name and Address</u>	<u>Mine Locations (Counties)</u>
Calumet and Hecla, Incorporated Calumet, Michigan	Houghton and Keweenaw
Copper Range Company Painesdale, Michigan	Houghton
Quincy Mining Company Hancock, Michigan	Houghton
White Pine Copper Company 53 West Jackson Boulevard Chicago, Illinois	Ontonagon

MARL PRODUCERS		
<u>Name</u>	<u>Address</u>	<u>Pit Location (County)</u>
A.		
Gerald Arnsman Carl Avery	R.F.D. #1, Hopkins Athens	Allegan Calhoun
B.		
*Baldwin Brothers Walter Bale Barnes & Van Antwerp Beckman Brothers Grant Brizendine Lester D. Brown Leon Burr	R.F.D. #1, Hastings Fennville Horton Shelby R.F.D. #2, Edwardsburg 1720 Colfax Ave., Benton Harbor 708 Arnold St., Mt. Pleasant	Barry Allegan Jackson Oceana Cass Berrien Mecosta, Newaygo
C.		
William Case	R.F.D. #1, Sherwood	St. Joseph
D.		
Arnie Delebaugh Dan Dunn	R.F.D. #2, Union City R.F.D. #1, Alger	Calhoun Ogemaw
E.		
Ehinger Brothers Clifford Ellis	West Branch R.F.D. #2, Grand Junction	Ogemaw Allegan
G.		
*John Gaylord	Fennville	Allegan
H.		
Lawrence Hayward *Ralph Hemmer Frank R. Hixon C. Stanley Hooker	Scotts R.F.D. #2, Levering R.F.D. #2, Marcellus 608 Colfax St., Cadillac	Kalamazoo Cheboygan Cass Osceola, Missaukee

*Producers with no output in 1952.

Marl Producers (cont)

<u>Name</u>	<u>Address</u>	<u>Pit Location (County)</u>
K.		
Virgil Kintigh Bernard C. Knauf Leslie Knox	R.F.D. #2, Jonesville Ravenna Colon	Hillsdale Ottawa St. Joseph
M.		
Claude Mastin Ralph Meyers	R.F.D. #1, Climax R.F.D. #1, West Olive	Kalamazoo Ottawa
O.		
Harry H. Olthouse Harold Osborn	R.F.D. #2, Caledonia R.F.D. #2, Montague	Kent Muskegon
P.		
Emil Pavlak	R.F.D. #2, Hopkins	Allegan
R.		
Reed and Wood Clyde M. Reed Alvin Roe	Colon Union City R.F.D. #1, Climax	St. Joseph, Branch Calhoun Kalamazoo
S.		
H. A. Carlton Schau Leo W. Speese	620 Terrace Ave., Kalamazoo Morley	Barry Montcalm, Lake, Mecosta, Newaygo
Dan Slack Joseph Steck Gordon F. Stone	R.F.D. #4, Kalamazoo R.F.D. #1, Vandalia 256 Granite St., Cadillac	Kalamazoo Cass Kalamazoo
T.		
Lawrence Truman and Son	Mecosta	Mecosta
W.		
Wierenga Brothers Wayne H. Wilson Melvin Woolf & Lee Brandon	Spring Lake R.F.D. #9, Kalamazoo Ravenna	Ottawa Kalamazoo Muskegon
Z.		
George Zimmerman	R.F.D. #3, Delton	Barry

PEAT PRODUCERS

<u>Name and Address</u>	<u>Pit Location</u>
Cravens Peat Moss R.D. No. 5, Box 359 Kalamazoo, Michigan	Near Kalamazoo, Kalamazoo Co.
Green Thumb Peat Humus Company Capac, Michigan	Near Capac, St. Clair and Lapeer counties
Michigan Peat, Incorporated 267 Fifth Avenue New York 16 New York	Near Capac, Lapeer and St. Clair counties
Perry Peat Company, Incorporated Box 667 Morrice, Michigan	Near Morrice, Shiawassee Co.
Irving L. Pratt and Son Scottville, Michigan	Near Scottville, Mason Co.

SALT COMPANIES

<u>Name and Address</u>	<u>Product</u>	<u>Plant Location</u>
The General Foods Corporation Diamond Crystal Salt Division St. Clair, Michigan	Evaporated salt	St. Clair, St. Clair Co.
International Salt Company, Inc. Scranton, Pennsylvania	Rock salt	Detroit, Wayne Co.
Manistee Salt Works 800 South Vandeventer Avenue St. Louis 10 Missouri	Evaporated salt	Manistee, Manistee Co.
Michigan Chemical Corporation 500 North Bankson St. Louis, Michigan	Evaporated salt	St. Louis, Gratiot Co.
Morton Salt Company 120 South La Salle Street Chicago, Illinois	Evaporated salt	Manistee, Manistee Co. Maryville, St. Clair Co.

COMMERCIAL SAND AND GRAVEL PRODUCERS

(Addresses are all in Michigan unless otherwise designated)

<u>Name and Address</u>	<u>Pit Location (County)</u>
A.	
Advance Building Materials Company, 46461 Ryan Road, Utica	Macomb
E. S. Albertson, 4060 Platt Road, Ann Arbor	Washtenaw
American Aggregates Corporation, Greenville, Ohio	Kalamazoo, Livingston, Oakland
Anderson Sand and Gravel Company, 401 Atwater, Saginaw	Tuscola
Cleo L. Arndt, Fennville	Allegan, Calhoun
B.	
Amos G. Baker, 487 Academy Street, Kalamazoo	Kalamazoo
*J. H. Baker and Sons, Port Huron	St. Clair
Battle Creek Gravel Company, 3800 Dickman Highway, Battle Creek	Calhoun
Floyd Beardslee, Route 3, Pontiac	Oakland
Clyde Benjamin, R.F.D. #1, Owosso	Shiawassee
Benthal Sand and Gravel, Reese	Tuscola
Bichler Brothers, 703 Ludington Street, Escanaba	Delta
Boichot Concrete Products Corporation, 1800 Turner Street, Lansing	Clinton
Daniel J. Bollig, 38068 Lakeshore Drive, Mt. Clemens	Macomb
M. J. Bowers, 30404 West 14 Mile Road, Farmington	Oakland
E. P. Brady and Company, 900 Citizens Bank Building, Flint	(Alpena, Cheboygan, Genesee, Lenawee, Livingston, Marquette, Presque Isle, Shiawassee, Washtenaw
Bunce Gravel, Route 1, Ravenna	Ottawa
C.	
*Caspian Lumber and Coal Company, Caspian Champion, Incorporated, Iron Mountain	Iron Dickinson, Iron, Marquette
*Cheney Gravel Company, Incorporated, Willoughby Road, Holt	Ingham
Chubb Sand and Gravel, 7505 Chubb Road, Northville	Washtenaw
Donald F. Clark, Morenci	Lenawee
Cloverland Milling and Supply Company, 801 Superior Avenue, Gladstone	Delta
Emil Combs, Route 1, Tekonsha	Calhoun

*No production reported.

Commercial Sand and Gravel Producers (cont)

<u>Name and Address</u>	<u>Pit Location (County)</u>
C. (cont)	
*Glenn Comstock, Bay City Concrete Products Company, Wakefield Construction Aggregates Corporation, 33 North La Salle Street, Chicago, Illinois	Bay Gogebic
*Consumers Sand and Gravel Company, Box 769, Kalamazoo	Ottawa (Dredge)
*H. C. Cushman, Star Route, Sears	Kalamazoo Osceola
D.	
Van E. Dailey, 410 West Sibley Street, Howell Roy Dayringer, Route 4, Ithaca Days River Sand and Gravel Company, Route 1, Gladstone	Livingston Gratiot
Frank Debelah, Traunik Deep River Block and Sand Company, Standish	Delta Alger
*Delhi Gravel Company, Holt Otis and Clyde Denslow, Weidman Ed. DeVries and Sons, 1400 Walker NW, Grand Rapids	Arenac Jackson Isabella
A. L. Dyer and Sons, McBride	Kent
*Herb Dyer, Greenville	Montcalm Montcalm
E.	
*East Lansing Gravel Company, Route 3, Mason Eastman Gravel Pit, R.F.D. #1, Weidman Ehinger Brothers, West Branch Elliott Ice and Coal Company, Hillsdale W. L. Emery Company, 1375 East Jefferson Avenue, Detroit	Ingham Isabella Ogemaw Hillsdale
	Wayne (Dredge)
F.	
Harry Fauss, Route 1, Durand The Ferris Company, Mason	Shiawassee Ingham
*Fisher Sand and Gravel Company, Route 2, Midland Foley and Beardslee, Route 3, Clarkston Richard Francis, Ontonagon	Midland Oakland Ontonagon
G.	
Gilbert Geers, Kent City Grande Brick Company, 1456 Fuller SE, Grand Rapids Grand Rapids Gravel Company, 2100 Chicago Drive SW, Grand Rapids	Kent Kent Kent

*No production reported.

Commercial Sand and Gravel Producers (cont)

<u>Name and Address</u>	<u>Pit Location (County)</u>
G. (cont)	
Gravel Producers, Incorporated, 100 East Kilgrove Road, Kalamazoo	Kalamazoo
Great Lakes Foundry Sand Company, 720 United Artists Building, Detroit	Tuscola
H.	
*H. & H. Gravel Company, Adrian	Lenawee
*Casper H. Haas Company, 217 Sydelle Avenue, Kalamazoo	Kalamazoo
*William Hall, Jr., 3520 Keewahdin Road, Port Huron	St. Clair
Hansen Gravel Company, 6430 Pierson Road, Flushing	Genesee
Hauthorn and Steenbock, Route 2, Hastings	Barry
Heide's Sand and Gravel, Route 1, Niles	Berrien
Charles R. Hemkes Company, Wakefield	Gogebic
Hersey Gravel Company, Hersey	Osceola
*Heselschwendt Gravel Company, Manchester	Washtenaw
*Dewey Hewitt and Sons, Allegan Hoadley and McLeod, Cass City	Allegan Sanilac
*Holly Sand and Gravel Company, Grange Hall Road, Route 1, Holly	Oakland
*Gunnar Holmberg, Route 1, Gladstone	Delta
Hoover Brothers, Waldron	Hillsdale
*George Hubscher and Son, 1111 East Pickard Street, Mt. Pleasant	Isabella
C. R. Hunt, Cass City	Tuscola
Hutchins Sand and Gravel Company, Gaylord	Otsego
I.	
Ireland and Lester Company, 220 North Wayne, St. Joseph	Berrien (Dredge)
J.	
John R. Sand and Gravel Company, 1865 Indiawood Road, Lake Orion	Oakland
Leonard Johnson, Box 31, Chatham	Alger
Thomas F. Johnson, 114 Lafayette Street, Grand Haven	Ottawa
Carl Jones Concrete Products, 7628 Toma Road, Pinckney	Livingston

*No production reported.

Commercial Sand and Gravel Producers (cont)

Name and AddressPit Location (County)

K.

Kelley Isle Lime and Transport Company,
Sandusky, Ohio
*John G. Kemler and Sons, 116 Second Street,
Rochester
*Kemler Brothers, 206 Walnut Street, Rochester
Harold Keill, Route 3, Niles
*S. E. Ketchum and Sons, 1120 North Edgar Road,
Holt
Killins Gravel Company, P. O. Box 46, Ann Arbor
Klumpp Brothers Gravel Company, Loveland Road,
Chelsea
Max Knaus, Traunik
*Knight Gravel Company, Port Sanilac
*Koan Gravel Company, Route 1, Holly
Koenig Coal and Supply Company, 1486 Gratiot
Avenue, Detroit
Kurtz Gravel Company, G5300 North Dort Highway,
Flint
Clayton W. and Donald R. Kurtz, R.F.D. 6, Flint

Macomb (Dredge)
Oakland
Oakland
Berrien
Ingham
Washtenaw
Washtenaw
Alger
Sanilac
Oakland
Oakland
Genesee
Genesee

L.

Lake Superior Gravel Company, Ramsay
Lancaster Sand and Gravel, 1130 South Market,
Hastings
A. S. Leffler Gravel Company, Davison
Ed. Light, 300 South Ottawa, St. Johns
A. Lindberg and Sons, Incorporated, Box 134,
Ishpeming
*Sam Lopnesto, 40 West St. Joseph Street, Hillsdale
*Lowell Gravel Company, Lowell

Gogebic
Barry
Genesee
Ionia
Marquette
Hillsdale
Kent

M.

Macomb Sand and Gravel Company, 3295 Auburn Road,
Utica
*Maertens Sand and Gravel Company, 1036 Buckingham,
Grosse Point
Manning and Locklin Gravel Company, Box 216,
Northville
Louis Marsack and Sons, 34381 Jefferson Avenue,
Mt. Clemens
H. L. Martin Gravel Company, Box 154, Westphalia
Hugh H. Mason and Sons, 302 North Center Avenue,
Gaylord
*John E. McDonald and Sons, Route 1, Kawkawlin

Macomb
Macomb
Wayne
Macomb
Ionia
Otsego, Cheboygan
Bay

*No production reported.

Commercial Sand and Gravel Producers (cont)

Name and AddressPit Location (County)

M. (cont)

McLane Brothers Sand and Gravel, 2282 Auburn,
Pontiac
James B. Michell, Route 3, South Haven
Michigan Sand and Gravel, Utica
Michigan Silica Company, Rockwood
Mickelson Brothers, 1741 School Road, Rochester
*Fred Miller, Jr., Ash Street, Kalamazoo
*Miller Gravel Company, 440 South Sutton, Jackson
Roy Millimaki, Box 328, River Street, Ishpeming
Morehouse Orchards, Fenton
Morgan Sand and Gravel Company, Utica

Oakland
Van Buren (Dredge)
Macomb
Wayne
Oakland
Kent
Jackson
Marquette
Livingston
Macomb

N.

*New Hudson Sand and Gravel Company, Milford
*Roy S. Nichols, Bridgeford Heights Har.,
Benton Harbor
*Nicholson Materials Company, 9690 West Jefferson
Avenue, Detroit
*Niles Sand and Gravel Company, U. S. Highway 31
and Fort Street, Niles
*Northland Coast Company, Charlevoix
North Star Washed Sand and Gravel Company, Ithaca
Northville Sand and Gravel Company, 18276 Beck
Road, Northville
Northwest Materials, Incorporated, Bryan, Ohio
Nugent Sand Company, Incorporated, P. O. Box 506,
Muskegon

Oakland
Berrien
Wayne (Dredge)
Berrien
Charlevoix
Gratiot
Wayne
Hillsdale
Muskegon

O.

Oakland Sand and Gravel Company, 741 Glengarry
Road, Route 3, Walled Lake

Oakland

P.

Edward Palmer and Son, 2527 East South, Jackson
*John Parks Sand and Gravel, Route 1, Perry
Pekaar and Van Doorn, 2774 28th Street SW, Grand
Rapids
A. D. Pennock, Nashville
Albert Peters, 5911 Mt. Vernon Road, Kalamazoo
*Phillips Marine Terminal Dock, Marine Terminal,
Bay City
Harry Pickitt, 409 Hubbard Street, Allegan

Jackson
Shiawassee
Kent
Barry
Kalamazoo
Bay (Dredge)
(Allegan, Antrim, Barry,
(Calhoun, Clinton, Gladwin,
(Ingham, Ionia, Jackson,
(Kalamazoo, Lake, Ogemaw,
(Roscommon, St. Joseph, Van
(Buren, Washtenaw, Wayne

*No production reported.

Commercial Sand and Gravel Producers (cont)

<u>Name and Address</u>	<u>Pit Location (County)</u>
P. (cont)	
*Porter Sand and Gravel Company, Tecumseh	Lenawee
John Post and Sons, Route 2, Swartz Creek	Genesee
*H. F. Postma Gravel Company, 2777 28th Street SW, Grand Rapids	Kent
Producers Core Sand Corporation, Michigan City, Indiana (Plant at Sawyer, Michigan)	Berrien
Q.	
*R. J. Quinlan, West High Street, Mt. Pleasant	Isabella
R.	
Ray Industries, Incorporated, P. O. Box 165, Detroit	Macomb
Ed. Reetz, West Branch	Ogemaw
*Riverside Gravel Company, Butterworth Road SW, Grand Rapids	Kent
Rocks Sand and Gravel Company, 2500 Chicago Drive SW, Grand Rapids	Kent
Walter Rosevear Pit, West Branch	Ogemaw
*Art Russell's Concrete Prod., Hillsdale Street, Hillsdale	Hillsdale
S.	
*Sabadash and Sabadash, 26250 West Outer Drive, Lincoln Park	Wayne (Dredge)
Ray Sablain, Incorporated, 2827 South Cedar Street, Lansing	Ingham
Sager Concrete Products, 1139 South Dettman Road, Jackson	Jackson
Saginaw Brick Company, Wood Street, Saginaw	Saginaw
Saginaw Core Sand Company, Saginaw	Saginaw
Salem Gravel and Construction Company, Incorporated, 5 Mile - Curtis Road, Salem	Washtenaw
*Mrs. Helma Samuelson, Chatham	Alger
Sand Products Corporation, 2489 First National Bank Building, Detroit	(Macomb, Manistee, Muskegon)
Sargent Sand Company, 2840 Bay Road, Saginaw	Mason, Tuscola (Dredge)
E. L. Schwaderer, Cass City	Tuscola
Shenk Gravel Company, Durand	Shiawassee
Slater's Sand and Gravel, 53-55 North Parke Street, Pontiac	Oakland
Justus Snelenberger, R.F.D. 1, Burt	Genesee

*No production reported.

Commercial Sand and Gravel Producers (cont)

<u>Name and Address</u>	<u>Pit Location (County)</u>
S. (cont)	
*Kenneth Stahl, Route 1, Clarksville	Ionia
*Stam Sand and Gravel Company, Sand Creek	Lenawee
Stamm Brothers Gravel Company, R.R. 1, Adrian	Lenawee
Standard Sand Company, 14201 Lake Shore Avenue, Grand Haven	Ottawa
H. Steenbock and Son, Route 2, Hastings	Barry
Frank H. Stoerk, Pierson	Montcalm
*Dick Stover, R.F.D. 2, Berrien Springs	Berrien
T.	
Taber-Carmody, 125 Front Avenue NW, Grand Rapids	(Clinton, Crawford, Gratiot, Missaukee, Montcalm, Ogemaw)
Tecumseh Gravel Company, Box 444, Tecumseh	Lenawee
*Thornton Construction Company, Hancock	Houghton
*Lamar Thumm, South Grove Street, Ypsilanti	Washtenaw
*Luke Tuckey, Cass City	Tuscola
*Twin Lakes Sand and Gravel Company, Riverdale	Gratiot
U.	
P. O. Underwood and L. A. Berry, 16525 Woodward Avenue, Detroit	Macomb
C. Utterback, Route 2, Mt. Pleasant	Isabella
V.	
*Miner Vander Salm, Jr., Incorporated, 5812 South Westnedge, Kalamazoo	Kalamazoo
Van Enkevorts Brothers, Bark River	Delta
*Vaughans Sand and Gravel Company, 2685 Deckerville Road, Caro	Tuscola
W.	
Ben Waanders, Route 5, Allegan	Allegan
*Wagner Ice and Gravel Company, Harbor Beach	Huron
Walkden Sand and Gravel Company, Buchanan	Berrien
Lyle J. Walker Sand and Gravel, 21040 Coolidge Highway, Rochester	Oakland
Walling Gravel Company, P.O. Box 52, St. Johns	Clinton
F. S. Ward, Route 1, Clarkston	Oakland
Ronald Weaver, R.F.D. 1, Owosso	Shiawassee

*No production reported.

Commercial Sand and Gravel Producers (cont)

<u>Name and Address</u>	<u>Pit Location (County)</u>
W. (cont)	
West Point Fuel and Supply Company, Incorporated, 18800 Fitzpatrick, Detroit	Wayne
West Shore Construction Company, Zeeland	(Allegan, Calhoun, Eaton, Kent, Montcalm, Muskegon, Ottawa, St. Joseph Chippewa St. Joseph)
I. L. Whitehead Company, Sault Ste. Marie	Washtenaw
White Pigeon Gravel Company, White Pigeon	Oakland
Whittaker and Gooding Company, 5800 Cherry Hill Road, Ypsilanti	Jackson
Wilkenson Sand and Gravel Company, 2282 Auburn, Pontiac	Alger
Willson Brothers, Rives Junction	Grand Traverse
Olga Winkka, Box 726, Marquette	
L. F. Wysong, Peninsula Street, Traverse City	
Y.	
John G. Yerington, R.R. 3, Box 34, Benton Harbor	(Allegan, Barry, Berrien, Calhoun, Cass, Ionia, Kalamazoo, Montcalm, St. Joseph, Van Buren)
Youngs Sand and Gravel Company, 9095 South Huron Drive, Ypsilanti	Washtenaw
Z.	
*Zahns Sand and Gravel, 2315 Ellsworth Road, Ann Arbor	Washtenaw
Harry Zeeff and Sons Gravel Company, 1029 Maynard Avenue SW, Grand Rapids	Kent

*No production reported.

STONE PRODUCERS

<u>Name and Address</u>	<u>Type of Stone</u>	<u>Quarry Location</u>
Arenac County Road Commission	Limestone, crushed (non-commercial)	East of Omer Sec. 16, T. 19N., R. 6E. Arenac County
F. G. Cheney Limestone Company, Incorporated Bellevue, Michigan	Limestone, crushed and dimensional	West of Bellevue Sec. 20, T. 1N., R. 6W. Eaton County
Drummond Dolomite, Inc. P. O. Box 688 Sheboygan, Wisconsin	Dolomite, crushed	Western end Drummond Is. Sec. 24, T. 42N., R. 5E. Chippewa County
The France Stone Company 1800 Toledo Trust Bldg. Toledo 14 Ohio	Dolomite, crushed	Monroe Sec. 7, T. 7S., R. 9E. Monroe County
Gogebic County Road Commission	Miscellaneous stone (non-commercial)	Gogebic County
Inland Lime and Stone Company Manistique, Michigan	Limestone, crushed	North of Hunt Spur Sec. 6, T. 42N., R. 12W. Mackinac County
John C. Jeffery Box 107 Parma, Michigan	Limestone, crushed	Northeast of Parma Sec. 19, T. 2S., R. 2W. Jackson County
The Metro-nite Company 3523 W. Silver Spring Drive Milwaukee 9 Wisconsin	Dolomite, crushed	Near Felch Sec. 26, T. 42N., R. 28W. Dickinson County
Michigan Limestone Division U. S. Steel Corporation 170 East Woodward Avenue Rogers City, Michigan	Limestone, crushed	Near Rogers City Sec. 23, T. 35N., R. 5E. Presque Isle County
Michigan Stone Company R.F.D. No. 2 Ottawa Lake, Michigan	Dolomite, crushed	East of Ottawa Lake Sec. 25, T. 8S., R. 6E. Monroe County
Monroe County Road Commission Monroe, Michigan	Dolomite, crushed (non-commercial)	East of Dundee Sec. 13, T. 6S., R. 7E. Monroe County
Onaway Stone Company Onaway, Michigan	Limestone, dimensional	North of Onaway Sec. 5, T. 34N., R. 2E. Presque Isle County
Petoskey Portland Cement Company Petoskey, Michigan	Limestone, crushed	West of Petoskey Sec. 3, T. 34N., R. 6W. Emmet County

Stone Producers (cont)

<u>Name and Address</u>	<u>Type of Stone</u>	<u>Quarry Location</u>
Ray Sandstone Quarry 303 Nottawaseppee Napoleon, Michigan	Sandstone	East of Napoleon Sec.6,T.4S.,R.2E. Jackson County
Star Sandstone Company Box 102 Napoleon, Michigan	Sandstone	East of Napoleon Sec.31,T.3S.,R.2E. Jackson County
Superior Rock Products Company Sagola, Michigan	Dolomite, crushed Mica schist, crushed Feldspar, crushed	East of Randville Sec.35,T.42N.,R.30W., Secs. 19 and 30,T.42N., R.29W. Dickinson County
Ralph Tanner and Associates Afton, Michigan	Limestone, crushed	North of Afton Sec.25,T.35N.,R.2W. Cheboygan County
The Wallace Stone Company Bayport, Michigan	Limestone, crushed and dimensional	Southeast of Bayport Sec.6,T.16N.,R.10E. Huron County
Wyandotte Chemicals Corporation Wyandotte, Michigan	Limestone, crushed	Alpena Sec.24,T.31N.,R.8E. Alpena County