

## Minerals

### M 1-12. Summary of mineral operations, 1840-1954.

Source: 1840-1889, reports of Sixth, Seventh, Eighth, Ninth, Tenth, and Eleventh Censuses; 1902-1929, *Census of Mines and Quarries* for 1902, 1909, 1919, and 1929; 1935, *Census of Business: 1935*; 1939 and 1954, *Census of Mineral Industries, 1939 and 1954*. (Data shown are as reproduced in the 1954 Census of Mineral Industries summary reports, except for a few corrections.)

Figures are based on establishment reports for each operation covered in the census. These reports include all of the information shown (as well as other related data). The different series are comparable, therefore, for a given year and a given industry. The comparability of figures for various census years, however, is affected somewhat by changes in the specifications for establishments covered. For 1954, the Census tabulations excluded small establishments for which each of the following three items was less than \$500 for the entire year: (1) Value of products shipped and services performed for others; (2) expenses for wages, salaries, supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery; and (3) capital expenditures for development and exploration of mineral properties, new construction and major alterations, and new and used machinery and equipment. For 1939 and 1929, in general, small establishments were excluded if each of three similar items amounted to less than \$2,500, and, in general, for 1919, if value of products was less than \$500 and expenditures for development work less than \$5,000. For earlier years, no general size level was specified for the censuses.

M 1, number of mines, quarries, and oil and gas wells. These figures are much less comparable from one year to another than the figures for series M 2-12 since they are greatly influenced by the inclusion or exclusion of very small operations, such as the activity of prospectors, small irregular operations, and oil and gas stripper operations. Many of these were below the Census level for inclusion for certain years but were included in other years (see preceding paragraph).

M 4, value added in mining. For 1954, represents gross value of shipments plus capital expenditures less cost of supplies, minerals received for preparation, fuel, purchased electric energy, contract work, and purchased machinery. For earlier years, to substitute for data not available from Census reports, a rough measure is included which represents value of shipments less cost of supplies, minerals received for preparation, fuel, purchased electric energy, and contract work.

M 5, production and development workers. For 1909-1954, the figures represent the average of reported employment for the midmonth pay period for the 12 months of the census year; or, in the case of the crude petroleum and natural-gas extraction industries for 1954, an average of such figures for a specified month in each quarter of the year.

M 11, capital expenditures for development and exploration of mineral property. For 1954 and 1939, the Census also obtained figures for capital expenditures for new and used machinery and equipment. Such items for 1954 were included in the capital expenditures figures used to compute value added (see series M 4).

M 12, aggregate horsepower rating of power equipment. Represents the aggregate horsepower rating of all prime

movers and electric motors driven by purchased energy in use or available for use at the end of the census year.

### M 13-274. General note.

The principal sources for these series are two annual publications: *Mineral Resources of the United States*, published annually for 1882-1931; and *Minerals Yearbook*, published annually since 1932-33. These volumes were prepared and issued by the Geological Survey from 1882 to 1923 and by the Bureau of Mines since 1924.

### M 13-37. Value of mineral products, in current dollars, 1880-1956.

Source: See general note for series M 13-274.

The figures for series M 13, M 14, M 20, and M 30 (the grand total and commodity subtotals) cover the period presented with two overlapping series. One on the so-called "old basis" runs from 1880 through 1948, while the other on the "new basis" is the series as currently compiled, beginning with *Minerals Yearbook, 1949*. The "new basis" series has also been extended by the Bureau of Mines back through 1925 for the grand totals and subtotals; it was carried back to 1947 and 1948 in *Minerals Yearbook, 1949*, and back through 1925 in *Minerals Yearbook, 1950*. Thus, the figures shown here for series M 13, M 14, M 20, and M 30 represent the "new basis" for 1925-1956, and the "old basis" for earlier years. However, as indicated below (see text for series M 30-37), certain important aspects of the "new basis" for the value of metals production have been applied by Resources for the Future, Inc., Washington, D.C., to all of the earlier metals production figures and, therefore, the total value, series M 13, and total metals, series M 30, are affected.

A description of the revision included in *Minerals Yearbook, 1949*, pp. 29-30, indicates the deficiencies in the earlier statistics which the "new basis" of measurement was designed to correct. These deficiencies and their corrections apply in the main to, and are, therefore, described below in the text for fuels (series M 14-19), nonmetals (series M 20-29), and metals (series M 30-37). Another improvement applicable to all statistics on the "new basis" is the correction of the value grand totals and subtotals back through 1925 to exclude mineral products made from materials of foreign origin, which had previously been included in some cases.

In addition to the general revision made in the *Minerals Yearbook, 1949* and *1950*, other less important revisions of the grand totals and subtotals for earlier years are often carried in later editions of the *Minerals Yearbook*. Series M 13, M 14, M 20, and M 30 present the most recently revised totals and subtotals. Since these revisions are often carried in later editions of the *Minerals Yearbook*, without full supporting commodity details, the values shown here for the individual commodities are not always strictly comparable with the totals and subtotals in all years.

In general, a major factor making for lack of long-run comparability within series, and among different series, is the failure of the basic source to use a consistent stage of production at which to measure value. Not all of the series provide a measure of value at the mining stage of production, as distinct from the manufacturing stage. Instead, value is measured

at the mining stage for some commodities and at a stage in the manufacturing process for others for which mine value figures may be difficult to collect (frequently because of the integration of mining and manufacturing production processes). Moreover, the stage at which the value of individual commodities is measured has changed from time to time. Consequently, the totals and subtotals for any year are a mixture of values at different stages in the production process and similar totals and subtotals for succeeding years may also represent different mixtures so that the comparability of the figures is significantly affected. However, double counting has generally been avoided by including a product at not more than one stage in the production process.

Another general difficulty involves geographic coverage. Totals and subtotals for 1925-1952 cover continental United States only; but individual commodity figures for 1925-1946 may include production outside continental United States. For 1952-1956, the totals and subtotals include Alaska and Hawaii, while for years prior to 1925, Alaska, Hawaii, Philippine Islands, and Puerto Rico are covered.

As is to be expected in long-time series, the completeness of coverage has improved considerably. For a discussion which deals with changes in coverage for the early years, see *Mineral Resources of the United States, 1918*, part I, pp. 1a-5a, which contains an historical description of the statistical operations of the Geological Survey, then responsible for such mineral statistics.

For figures which more closely approximate a mine-value basis for all commodities for 1899, 1909, 1919, 1929, and 1937, see Harold Barger and Sam H. Schurr, *The Mining Industries, 1899-1939; A Study of Output, Employment and Productivity*, National Bureau of Economic Research, New York, 1944, pp. 305-309. By way of comparison, the estimated mine value for all minerals presented by Barger and Schurr is (in million dollars of approximate value): 1899, \$600; 1909, \$1,200; 1919, \$3,200; 1929, \$4,100; and 1937, \$3,800.

**M 14-19.** Value of fuels, 1880-1956.

Source: See general note for series M 13-274.

See also text for series M 13-37.

The individual commodities shown constitute for practical purposes all the mineral fuels produced. The figures for total fuels (series M 14) were taken directly from recent issues of the *Minerals Yearbook* and include, in addition, back to 1925 asphalt and related bitumens, carbon dioxide (natural), helium, and peat. These products are not fuels, but apparently are included in the total fuels figures because work dealing with them is organized within the several fuels divisions of the Bureau of Mines. Their combined values are too small to affect seriously the total fuels figures.

**M 14,** total value of fuels. The most important difference between the "old" and "new" basis series is the inclusion of natural gas as valued at the well in the new series as opposed to natural gas valued at the point of consumption in the old series. In 1925, when this discontinuity occurs, natural gas was not so important, nor was the difference between well value and point of consumption value so great, as to cause a major break in the series (total value of fuels for 1925, on the "old" basis was \$3,059 million). See also text for series M 18.

**M 15,** bituminous coal and lignite. Represents total value of production f.o.b. mine. Selling costs are excluded for 1880-1936 and included for 1937-1956, except for 1939 when producers were asked to exclude them but in fact some included them. Figures include small quantities of anthracite mined in States other than Pennsylvania.

**M 16,** Pennsylvania anthracite. Represents total value of production f.o.b. mine. Data for 1951-1956 are not strictly

comparable with figures for earlier years. The later figures include output of independent operators formerly classified as "bootleggers" but now operating under legal agreements with the owners of the coal lands. Data for 1941-1950 include some "bootleg" coal purchased by legitimate operators and prepared at their breakers.

**M 17,** petroleum. Represents value of crude oil at the well.

**M 18,** natural gas. Represents total value of "marketed production," i.e., gross withdrawals less repressuring, vented and wasted. Beginning with 1947, transmission losses and storage are included. Value is measured at the well for 1925-1956 and at the point of consumption prior to 1925. (The value at the point of consumption was \$265 million in 1925.)

For some years prior to 1900 the value shown is for coal and fuel wood displaced by natural gas rather than the value of gas consumed as actually reported. For example, in 1889 the latter was \$11 million.

**M 19,** natural-gas liquids. Represents value at the plant, and includes natural gasoline, finished gasoline, naphtha, other cycle products, and beginning with 1941, liquefied petroleum gases.

**M 20-29.** Value of nonmetals (except fuels), 1880-1956.

Source: See general note for series M 13-274.

See also text for series M 13-37.

**M 20,** total nonmetals. Figures include value of nonmetals not shown separately. Figures are heavily weighted by the value of products classified as manufactured in the Bureau of the Budget, *Standard Industrial Classification Manual*. Cement and lime, products so classified, are included instead of their raw material components. Integrated operations make it difficult to obtain a value for the raw materials, which usually are not purchased on the open market, but obtained from associated operations. The value of stone includes an indeterminate amount of manufacturing because many dimension stone quarries manufacture the stone into finished products. The value of salt also includes a substantial amount of manufacturing as defined in the *Standard Industrial Classification Manual*.

The value figures for clay essentially represent the value of clay manufactures (mainly heavy clay products, such as brick, tile, etc.) for practically the entire period. Beginning with 1947, the totals for nonmetals include the value of raw clay alone, and completely exclude the value of manufactured clay products. The exact definition of clay value (which dominated the total value of nonmetals for many years) has changed several times during the long period covered. See text below for series M 22-23.

Series M 20 has a number of discontinuities. These include changes in the method of valuing clay and inadequate coverage of sand and gravel before 1905 and clay products before 1894. Other sources of noncomparability are also present. For these reasons and because of the heavy influence of manufacturing as defined in the *Standard Industrial Classification Manual* in the total value, this series should be used with great care. By way of comparison, the mine value subtotals for nonmetals as estimated in Barger and Schurr (see text for series M 13-37) are (in million dollars of approximate value): 1899, \$60; 1909, \$125; 1919, \$240; 1929, \$500; 1937, \$390.

**M 21,** cement. Valuation is f.o.b. mill excluding the cost of the container. Included are portland, natural, masonry-natural, slag (formerly referred to as puzzolan) and hydraulic lime cements. (See also text for series M 178 regarding coverage of prepared masonry cement and change in 1955.) For

1912-1956, figures represent total value of shipments; for 1880-1911, figures are for value of production. For 1880-1890, figures are estimates. Early decade valuation estimates not shown in the table include: 1818-1829, \$0.2 million; 1830-1839, \$1 million; 1840-1849, \$4 million; 1850-1859, \$9 million; 1860-1869, \$14 million; and 1870-1879, \$19 million.

**M 22-23, clay.** Raw clay and clay products are both shown because total nonmetals (series M 20) has been defined so as to include one or the other or parts of both at different times. For 1947-1956, series M 20 includes the value for raw clay (series M 22); for 1945-1946, it includes the value of heavy clay products, other than pottery and refractories (series M 23) and the value of raw clay sold or used, except for the value of raw clay included in the heavy manufactured products represented in series M 23 for those years. For 1936-1944, series M 20 includes the value of heavy clay products (other than pottery and refractories), as shown in series M 23, and also the value of raw clay sold (1936-1941), and sold or shipped (1942-1944) by producers, as shown in series M 22. Prior to 1936, series M 20 includes the value of manufactured clay products shown in series M 23, as representing the first marketable form of most of the clay produced.

Prior to 1944, raw clay (series M 22) was mainly restricted to "merchant clay," marketed as raw clay, excluding the very great amounts of clay converted into brick and other products before sale. In 1944, coverage was expanded in an attempt to include total clay sold or used by producers (see *Minerals Yearbook, 1944*, pp. 1326-1327). Essentially, the figures for 1936-1941 shown represent the value of raw clays sold; for 1942-1944, the values of raw clays sold or shipped; for 1945-1946 and 1950-1956, the value of all raw clays sold or used by the producers; and for 1947-1949, the value of all raw clays sold or used by the producers, except clay used in the manufacture of cement. (Although published information in *Minerals Yearbook* indicates the inclusion of clay used in the manufacture of cement only for the years 1945-1946 and 1954-1956, unpublished information from the Bureau of Mines reveals such clay is also included for 1950-1953.)

For 1936-1947, series M 22 excludes the value of fullers earth, although it is included in total nonmetals. For those years, fullers earth was recorded separately by the Bureau of Mines.

Series M 23 is a clay manufactures series (as discussed above) and prior to 1936 represents the total value of clay products. For 1936-1946, the figures represent the value of heavy clay products other than potteries and refractories.

**M 24, lime.** Represents the selling value, f.o.b. plant, excluding cost of container. Data for 1953-1956 are not strictly comparable with those for earlier years. Prior to 1953, the series has only partial coverage of captive plants; beginning with 1953, presumably coverage is complete for both open-market and captive tonnage production. *Mineral Resources, 1914*, vol. II, p. 363, considers the series reliable only from 1894 on, stating that: "Although the statistics of the production of lime collected by the United States Geological Survey date, in one form or another, back to 1880, reliable figures showing the extent and growth of the industry have been available only since 1894 . . . these early figures [prior to 1894] are much too large; but there is no adequate means of explaining the discrepancy. The statistics are sufficiently consistent to indicate a steady growth in quantity and, with a few exceptions, in value for 1880-1888, but in other respects they cannot be considered reliable."

**M 25, sand and gravel.** Represents the value of sand and gravel at the pit (or source). This is the total value of sand and gravel sold or used by the producer, although the terms "sales" and "production" are used interchangeably, stocks remain small and relatively constant from year to year. Coverage includes commercial and noncommercial (government and contractor) operations. Values of glass sand and railroad ballast are also included. Also includes ground sand for 1954-1956 (1954 value, \$6 million), formerly included elsewhere in value of mineral products. Coverage of gravel was incomplete for 1902-1904.

**M 26, stone, including slate.** Stone sold or used by producers is valued f.o.b. quarries or mills. Slate is valued f.o.b. quarry or nearest point of shipment. Since manufacturing operations are often integrated with dimension stone quarries, the figures include a sizable, but indeterminate value for manufacturing. Stone coverage includes granite, basalt and related rocks (traprock), marble, limestone, sandstone, and other stone. For 1954-1956, includes ground sandstone, quartz, and quartzite used for abrasives and other uses (formerly included elsewhere in value of nonmetals), stone for cement and lime (value excluded from nonmetals total), and shell (not formerly covered by Bureau of Mines). Value of these three categories totaled \$105 million in 1954. Both dimension stone and nondimension (crushed) stone are included. Slate includes roofing slate, millstock, flagstones, granules, flour, and other. Data for 1880-1888 are incomplete, representing building stone only.

**M 27, phosphate rock.** Represents the value f.o.b. mine. For 1950-1956, figures refer to marketable production; for earlier years, to phosphate rock sold or used.

**M 28, salt.** Represents the value f.o.b. mine or refinery of common salt sold or used by producers, excluding cost of cooerage or container. Included are dry salt, both evaporated (manufactured) and rock, and also salt in brine. For 1880-1892, many manufacturers included the value of the container in the value reported.

**M 29, sulfur.** Represents the total value of shipments. Coverage includes Frasch process mine output plus other mine output since 1945 and recovered elemental sulfur since 1950. Data for 1901-1903 include pyrites.

**M 30-37. Value of metals, 1880-1956.**

Source: See general note for series M 13-274.

See also text for series M 13-37.

**M 30, total metals.** Includes the value of some metals not shown separately. Adjustments in figures for years prior to 1925 have been made by Resources for the Future, Inc., Washington, D.C. Figures do not agree with those shown in the *Minerals Yearbook* prior to 1925, because the *Yearbook* figures include the value of pig iron and aluminum, both manufactured products, whereas the figures shown here include the value of iron ore and bauxite, the products of mines. A major revision of the value series in 1949 (see text for series M 13-37) substituted iron ore and bauxite for pig iron and aluminum, but the Bureau of Mines has not yet officially carried these revisions back to the years before 1925. Other relatively minor changes involving the substitution of mine values for manufactured values were made in the 1949 revision of the total metals figures, and some duplication within the totals for metals was eliminated; but because of the difficulties involved, these changes have not been applied to the pre-1925 figures shown here. However, since the iron ore and bauxite substitutions constitute the major elements in the revision,

there is no major discontinuity between the pre- and post-1925 total metals figures.

The figures for gold, silver, copper, lead, and zinc for all years are based on the smelter or refinery value of the metals, not their value at the mine. The practice of valuing these products at the manufactured stage was not altered by the 1949 revision, because the complexity of their ores makes mine values difficult to derive. However, effective with the 1949 revision, the total value for each of these metals was derived by applying to the recoverable mine production, the average selling price of the refined metal.

By way of comparison, the mine value for total metals is estimated in Barger and Schurr (cited in text for series M 13-37) for selected years (in million dollars of approximate value): 1899, \$189; 1909, \$329; 1919, \$540; 1929, \$627; 1937, \$642.

**M 31, iron ore.** Represents total value of ore shipments. For 1906-1956, excludes ore containing 5 percent or more manganese, and for 1916-1941, excludes ore for paint. Figures for 1881, 1890, and 1891 were estimated by multiplying the arithmetic mean of the average value of the preceding year and the following year by the quantity of output for the year to be estimated.

**M 32, copper.** For 1947-1956, figures represent the average price of refined copper multiplied by mine production of recoverable copper. For 1880-1946, figures represent the value of the smelter output from domestic ores. For 1908-1916, figures are as valued at New York City.

**M 33, lead.** For 1947-1956, figures represent the average price of primary refined lead multiplied by the mine production of recoverable lead. For 1880-1946, figures represent value of refinery output from domestic ores. For 1908-1916, figures are as valued at New York City.

**M 34, zinc.** For 1947-1956, figures represent the average price of the smelter product multiplied by the recoverable mine output. For 1880-1946, figures represent the value of smelter output from domestic ores. For 1908-1914, figures are based on the average St. Louis quotation; for 1915-1923, figures are based on average selling price for all grades.

**M 35, gold.** For 1947-1956, figures represent the recoverable content of ore (mine output) multiplied by official price per fine ounce (\$35). For 1880-1946, figures represent refinery or mint output multiplied by the official price. The official price of gold has been set at \$35 since January 1934; prior to then it was \$20.67, although the price of gold was unsettled in 1933 because the United States went off the gold standard in April of that year.

**M 36, silver.** For 1947-1956, figures represent the recoverable ore content multiplied by the official mint price of the refined metal. For 1880-1946, figures represent refinery or mint output multiplied by the official price.

**M 37, molybdenum.** Figures represent the value of shipments of molybdenum concentrates and are largely estimated.

**M 38-50.** Value of mineral production, imports, and exports, in constant dollars, 1900-1957.

Source: Bureau of the Census, *Raw Materials in the United States Economy: 1900-1957*, Working Paper No. 6 (forthcoming).

The figures were obtained by multiplying the physical quantity of each raw material for a given year by the average unit value of the material for 1954. For materials produced domestically, the unit value weights are average values at the mine, approximately as indicated by the 1954 Census of Mineral Industries. For materials not produced in the United States in the 1954 period, average unit value of imports was generally

used. Production figures include approximately 75 mineral products which account for over 99 percent of the total value of mineral output as measured in the 1954 Census of Mineral Industries; production represents primary production only. Import and export figures include not only primary materials but also estimates of the raw material equivalents of semi-fabricated and fabricated products, in order to approximate the raw materials required for end-use products consumed in the United States. Thus, the mineral equivalents of the foreign trade in paints, other chemicals, and machinery were computed and added to the imports and exports of crude minerals. Such estimates affected most significantly the results for certain metallic minerals, particularly iron ore imports and exports, which were influenced by the estimated iron content of such things as machinery and vehicles. More detailed figures will be shown in the source; for example, it will show separately series for "iron and ferroalloys" and "other metals, except gold"; and for "construction materials" and "other non-metallic minerals (except fuels)."

**M 51-62.** Indexes of physical volume of mineral production (Bureau of Mines), 1880-1956.

Source: 1880-1954, Bureau of Mines, *Minerals Yearbook, 1956*, vol. I, pp. 3-5; 1955-1956, Bureau of Mines, records.

These index numbers constitute an updating of the index numbers originally prepared by Y. S. Leong, "Index of the Physical Volume Production of Minerals, 1880-1948," *Journal of the American Statistical Association*, March 1950. Subsequently, Leong made revisions in his index for 1930-1948 to take account of a new natural-gas production series. Using essentially the same methods, the Bureau of Mines has brought the indexes up to date, and has converted the entire index to a 1947-49 base. Leong included 63 series in his index, representing 98 percent of the value of all minerals produced in the United States in the base period 1935-39. The number of series is smaller in the earlier years of the index partly because new minerals came into production during the long period covered, and partly because data for minerals in production were sometimes not available in the earlier years. Estimates were used in some cases when actual production data were not available. Over the long period covered, the indexes were constructed by linking 5 overlapping segments with 5 different sets of value weights (value at the mine, actual or estimated). The weighting periods used were 1889-91 (for 1880-1903); 1909-13 (for 1897-1920); 1923-25 (for 1917-1939); 1935-39 (for 1929-1948); and 1947-49 (for 1941-1956). The separate segments of the indexes were spliced to form continuous series covering the entire period by selecting a particular year as the splicing origin and deriving averages of the 2 segments for a 3- or 5-year period centered on the splicing origin.

**M 63-66.** Indexes of mineral production (Federal Reserve Board), 1919-1956.

Source: Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*, various issues.

These indexes are available monthly as well as annually. The most recent revision of the index is explained in the December 1953 issue of the *Bulletin* and the previous revision is explained in the October 1943 issue. The latest revision introduced 1947-49 as a comparison base, and the year 1947 as a weight base; also value-added weights (which had to be estimated) are used instead of the gross value weights previously used for minerals. Coverage was also increased in the latest revision. Stone and earth minerals, not previously represented, are covered with 44 series based on annual Bureau of Mines data; fuels coverage was expanded through the addition of natural gas, natural-gas liquids, and oil and gas well drilling,

to the previous coverage of anthracite, bituminous coal, and crude petroleum. Although the revision covers only the years since 1947, the Federal Reserve Board states that with respect to the total minerals index, the "continuity of measurement back to 1919 has been preserved" (*Federal Reserve Monthly Index of Industrial Production*, 1953 revision, reprint from *Federal Reserve Bulletin*, December 1953, p. 3).

The total index splices the following segments: 1947-1956 on the revised basis; 1939-1946 converted to the 1947-49 comparison base, with the old weights (1937 gross valuations) unchanged, but adjusted to accord with a 1947 relative to 1939 benchmark level, which was calculated by using estimated value-added weights based on the average for 1939 and 1947; 1919-1938 converted to the 1947-49 comparison base but leaving the old weights unchanged—1937 gross valuations for 1930-1938, 1923 gross valuations for 1923-1929, and average 1919 and 1923 gross valuations for 1919-1922.

For mineral fuels and metal mining, the Federal Reserve Board presents indexes on the 1947-49 base only for 1947-1956; in these indexes, 1947 estimated value-added weights were used. For earlier years, the Federal Reserve Board shows the indexes on a 1935-39 base, and these have been converted to a 1947-49 base for presentation here. For 1930-1946, the weights used are 1937 gross valuations, and, for earlier years, the weight periods are the same as those indicated above for the total index.

#### M 67-70. Indexes of mineral production (NBER), 1899-1939.

Source: Harold Barger and Sam H. Schurr, *The Mining Industries, 1899-1939: A Study of Output, Employment and Productivity*, National Bureau of Economic Research, New York, 1944, pp. 354-355.

These indexes were derived by combining the physical quantities of different products with unit mine values serving as weights. See the source, p. 272, for a technical description of the procedures used to construct these indexes.

The fuels index (series M 68) includes Pennsylvania anthracite, bituminous coal, petroleum, natural gas, and natural gasoline.

The nonmetals index (series M 69) includes asbestos, asphalt, barite, borates, bromine, fluorspar, tripoli, garnet, pumice, ground sand, sand, gravel, sodium salts, calcium chloride, abrasive sandstone, clay, fuller's earth, stone (dimension and nondimension), talc, gypsum, pyrites, sulfur, mica, potash, magnesite, other magnesium compounds, graphite, feldspar, and phosphate rock.

The metals index (series M 70) includes gold, silver, copper, lead, zinc, iron ore, manganese, tungsten, molybdenum, mercury, and bauxite.

#### M 71-87. General note.

These series are expressed in terms of British thermal units in order to have a common denominator. A British thermal unit is "the quantity of heat required to raise the temperature of one pound of water 1° F. at or near its point of maximum density." The abbreviation commonly used, and employed below, is B.t.u.

#### M 71. Total production of mineral energy fuels, in B.t.u.'s, 1800-1956.

Source: This series is the sum of the figures for series M 72-75.

Totals have been derived for only the mineral fuels because of uncertainty as to the appropriate conversion factor to apply to hydroelectricity for comparability with the other energy sources.

#### M 72. Production of bituminous coal, in B.t.u.'s, 1800-1956.

Source: 1800-1849, series M 88 converted to B.t.u.'s at the same rate as data for more recent years; 1850-1885, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1890-1895, converted to B.t.u.'s from physical quantities shown in successive volumes of *Mineral Resources of the United States* and *Minerals Yearbook*; 1900-1956, *Minerals Yearbook*, annual volumes.

The B.t.u. equivalent employed as a conversion factor is that currently used by the Bureau of Mines, 13,100 B.t.u. per pound of coal. Production statistics for bituminous coal include lignite and also cover Alaska.

#### M 73. Production of Pennsylvania anthracite, in B.t.u.'s, 1810-1956.

Source: See source for series M 72.

The B.t.u. equivalent employed as a conversion factor is that currently used by the Bureau of Mines, 12,700 B.t.u. per pound of coal.

#### M 74. Production of crude oil, in B.t.u.'s, 1860-1956.

Source: 1860-1895, converted to B.t.u.'s from physical quantities shown in successive volumes of *Mineral Resources of the United States* and *Minerals Yearbook*; 1900-1956, *Minerals Yearbook*, annual volumes.

The B.t.u. equivalent used as a conversion factor is that currently used by the Bureau of Mines, 5,800,000 B.t.u. per barrel. Figures include commingled condensate.

#### M 75. Production of natural gas, wet, in B.t.u.'s, 1885-1956.

Source: See general note for series M 13-274.

"Natural gas, wet," refers to natural gas prior to processing at natural-gas liquid plants. Figures for 1920-1956 are termed "marketed production," and comprise gas sold or consumed by producers, including losses in transmission, amounts added to storage, and increases in gas in pipelines. Gas vented and wasted and used in repressuring is excluded. Data prior to 1920 are not strictly comparable with those for later years. Apparently, for the earlier period, neither net storage change nor transmission loss was included.

Total production, before subtraction to obtain marketed production, has been continuously converted at the rate of 1,075 B.t.u. per cubic foot. To obtain marketed production, the amounts repressured, vented, and wasted have been converted at 1,035 B.t.u. per cubic foot and subtracted from the B.t.u. value of total production.

Comparability problems arise prior to 1900 because the figures for the very early period are based on the estimated quantity of coal and fuel wood displaced, and are not measures of gas produced.

#### M 76. Electricity produced from waterpower, at prevailing central station equivalent, in B.t.u.'s, 1900-1956.

Source: *Minerals Yearbook*, annual volumes.

Figures include installations owned by manufacturing plants and mines, as well as government and privately owned public utilities. The fuel equivalent of waterpower is calculated from the kilowatt-hours of power produced whenever this figure is available, as it is for all public utility plants since 1919. Otherwise, the fuel equivalent is calculated from the reported horsepower of installed water wheels, assuming a capacity factor of 20 percent for factories and mines and 40 percent for public utilities. In converting waterpower to its equivalent of fuel required to perform the same work, the prevailing or average performance of all fuel-burning central electric stations for each year in question has been used. This has dropped from 6.85 pounds of coal per kilowatt-hour in 1900 to 0.94 in 1956.

**M 77. Electricity produced from waterpower, at direct calorific equivalent, in B.t.u.'s, 1890-1956.**

Source: Converted at the rate of 3,412 B.t.u. per kilowatt-hour, direct calorific equivalent of electricity, from successive volumes of *Mineral Resources of the United States and Minerals Yearbook*. This represents the same basic production series as series M 76.

**M 78-87. General note.**

All of the consumption figures since 1920, except series M 86 and M 87, are Bureau of Mines calculated consumption estimates. The Bureau generally defines calculated consumption as production plus imports (including shipments to non-contiguous Territories) minus exports plus or minus net change in stocks. Only in the case of bituminous coal since 1933 has the Bureau derived consumption by adding together known consumption by use. (See also text for series M 108-116.) All the consumption estimates prepared by Resources for the Future, Inc., have also been derived in accordance with the above definition except for series M 87, fuel wood consumption, which has been estimated directly.

**M 78. Calculated consumption of total mineral energy fuels, in B.t.u.'s, 1850-1956.**

Source: This series is the sum of series M 79-84.

See also text for series M 71.

A total including fuel wood has not been shown because of the inexact nature of the available estimates and conversion factors.

**M 79-80. Calculated consumption of bituminous coal and Pennsylvania anthracite, in B.t.u.'s, 1850-1956.**

Source: 1850-1919, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1920-1956, *Minerals Yearbook, 1956*, vol. II.

Bituminous consumption for 1850-1932 represents production plus imports minus exports plus or minus net change in stocks. That method of derivation ignores variables such as stocks at lake and tidewater docks, stocks at other intermediate storage piles between mine and consumers, and coal in transit. For 1933-1956, consumption represents the addition of known consumption by use.

See also text for series M 72 and M 73 and general note for series M 78-87.

**M 81-82. Calculated consumption of crude oil and petroleum products, net imports, in B.t.u.'s, 1860-1956.**

Source: 1860-1919, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1920-1956, *Minerals Yearbook, 1956*, vol. II.

Net imports of petroleum products equals total imports minus total exports, a negative figure signifying an export surplus for that year. Series M 82 is a composite series which has been converted at the following standard Bureau of Mines factors: Gasoline, 5,248,000 B.t.u. per barrel; kerosene, 5,670,000; distillate fuel oil, 5,825,000; residual fuel oil, 6,287,000; wax, 5,537,280; lubricants, 6,064,800; asphalt, 6,636,000; and miscellaneous petroleum products, 5,796,000.

For 1860-1919, series M 81 and M 82 were combined and converted at varying rates at different times depending upon the relative importance of Pennsylvania grade, which has a lower B.t.u. content, compared to other grades.

See also text for series M 74.

**M 83. Calculated consumption of natural gas, dry, in B.t.u.'s, 1885-1956.**

Source: 1885-1919, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming);

1920-1956, *Minerals Yearbook, 1956*, vol. II.

"Natural gas, dry," refers to natural gas after it has been processed for natural-gas liquids. Figures were converted at the rate of 1,035 B.t.u. per cubic foot; the processing accounts for the lower B.t.u. content of the gas as compared with series M 75. Consumption for 1920-1956 differs from "marketed production" by net change in foreign trade, net change in storage, and extraction loss, but includes losses in transmission. For 1885-1919, consumption is defined as total production (see text for series M 75) plus imports minus exports.

**M 84. Calculated consumption of natural-gas liquids, in B.t.u.'s, 1911-1956.**

Source: 1911-1919, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1920-1956, Bureau of Mines, *Minerals Yearbook, vol. II*.

Standard Bureau of Mines conversion factors have been used for the components of natural gas liquids: Natural gasoline, 110,000 B.t.u. per gallon; and liquefied petroleum gases, 95,500 B.t.u. per gallon.

**M 85. Calculated consumption of electricity from waterpower, at prevailing central station equivalent, in B.t.u.'s, 1890-1956.**

Source: 1890-1919, Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1920-1956, *Minerals Yearbook, 1956*, vol. II.

Consumption differs from production by the quantity of imports. In the early years imports drop to zero.

See also text for series M 76.

**M 86. Calculated consumption of electricity from waterpower, at direct calorific equivalent, in B.t.u.'s, 1890-1956.**

Source: 1890-1919, in kilowatt-hours in Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming); 1920-1956, in kilowatt-hours in successive volumes of *Minerals Yearbook*. Entire series converted at the rate of 3,412 B.t.u. per kilowatt-hour, direct calorific equivalent of electricity.

This series represents the same basic consumption series as series M 85.

**M 87. Calculated consumption of fuel wood, in B.t.u.'s, 1850-1956.**

Source: Resources for the Future, Inc., Washington, D. C., *Energy in the American Economy* (forthcoming).

The conversion factors used were the following: 1900-1955, 19,407,000 B.t.u. per cord; 1900, 20,154,000 B.t.u. per cord; and 1850-1895, 20,960,000 B.t.u. per cord. These conversion factors were derived from the following fuel equivalents: After 1900, 1.35 cords of wood = 1 ton of bituminous coal; in 1900, 1.30 cords of wood = 1 ton of bituminous coal, and prior to 1900, 1.25 cords of wood = 1 ton of bituminous coal (J. F. Dewhurst and Associates, *America's Needs and Resources*, New York, 1955, p. 1108).

**M 88-101. General note.**

Coverage of bituminous coal by the Bureau of Mines includes all subbituminous coal and lignite, and anthracite and semianthracite produced outside of Pennsylvania. These series exclude Pennsylvania anthracite and, for 1955-1956, Texas lignite. Total production of lignite in 1956 was 2.9 million of the total bituminous coal production of 500.9 million short tons. Production of small mines having an output of less than 1,000 short tons per year is not included. For all Bureau of Mines series shown here, data on Alaska are included. In 1956, Alaskan production totaled 726,801 short tons.)

**M 88. Bituminous coal, total production, 1800-1956.**

Source: 1800-1885, H. N. Eavenson, *The First Century and a Quarter of American Coal Industry*, Pittsburgh, 1942, pp. 426-434; 1886-1956, see general note, series M 13-274.

Bureau of Mines production data are based on detailed annual reports furnished by producers. Output not directly reported by producers, primarily that of the small mines, is obtained with some accuracy from State mine departments or railroad carloadings (*Minerals Yearbook, 1956*, vol. II, p. 29).

Beginning with 1952, series M 89 and M 90 do not add to series M 88 because auger production is included in series M 88.

Prior to 1886, production figures shown are those as derived by Eavenson and considered superior to the early Geological Survey figures, which appear in *Mineral Resources of the United States*. Prior to 1880, when the Geological Survey began its annual report system, Survey estimates of production came from the "decennial census, supplemented by records from State and trade sources. In the absence of other information, estimates were made for the intercensus years to round out the totals" (*Mineral Resources of the United States, 1923*, vol. II, p. 544). In reference to census data for these early years Eavenson states: "The early census returns about coal began in 1830, and were admittedly incomplete; the next two census results are given in value and not in tons produced, and the first really good figures began in 1880" (Eavenson, cited above, p. xiii). Eavenson's estimates were made on an individual State basis and were derived from State, county, newspaper, census, and any other documented records available.

**M 89-90. Bituminous coal, underground and strip production, 1914-1956.**

Source: See general note for series M 13-274.

For 1943-1956, strip pit coverage includes all mines. For 1914-1942, coverage includes power strip pits proper but excludes horse stripping operations and mines combining stripping and underground in the same operation.

**M 91-93. Bituminous coal, average value, f.o.b. mine, 1880-1956.**

Source: See general note for series M 13-274.

Figures represent value received at the mines f.o.b. cars. For 1880-1936, figures exclude selling expense; for 1937-1956, such costs are included. However, for 1939, *Minerals Yearbook, 1946*, states that "producers were asked to exclude . . . [them] in reporting value, but a number of them included such costs" (p. 299).

*Mineral Resources of the United States, 1923*, vol. II, discusses at length the problem of valuation of coal not sold but used by the producer. "Coal used at the mine, coal coked by the producing company, and coal used in some other industry by that company . . . is not sold, and the value placed upon it is either an estimate or the amount at which it is carried on the company's books. Either value is presumably the amount the coal would have brought if it had been sold or the amount other fuel . . . would have cost if it had been purchased. In other words, the values given represent returns to the operators for coal sold plus the estimated value of that not sold. The value thus fixed is more or less arbitrary and does not necessarily represent the current prices for coal sold commercially" (pp. 615-616).

For 1915-1942, the average value for strip mines represents power strip pits proper and excludes horse stripping opera-

tions and mines combining stripping and underground in the same operation. For 1943-1956, coverage includes all strip mines.

**M 94. Bituminous coal, railroad freight charges per short ton, 1923-1956.**

Source: See general note for series M 13-274.

This is an Interstate Commerce Commission series reproduced in the Bureau of Mines publications and more exactly defined as the "average revenue received by Class I steam railroads per net ton of revenue bituminous coal originated, as reported to the Interstate Commerce Commission" (*Minerals Yearbook, 1937*, p. 803).

**M 95-96. Bituminous coal, foreign trade, 1867-1956.**

Source: See general note for series M 13-274.

Figures on imports and exports were compiled by the Bureau of Mines (or Geological Survey) from records of the Bureau of the Census. Import figures are "imports for consumption." For foreign trade definitions, see introduction to Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

Figures for 1867-1885 and 1890-1914 are for fiscal years ending June 30; all other figures presumably represent calendar years. Figures for 1867-1889 were converted from long to short tons to form a continuously comparable series.

**M 97. Bituminous coal, stocks, 1916-1956.**

Source: See general note for series M 13-274.

For 1933-1956, figures were labeled "end-of-year stocks at industrial consumer and retail yards"; for 1916-1932, "consumers' stocks." Figures for 1916-1929 were estimated, mainly from data compiled from a list of 5,000 consumers whose stocks in 1918 bore a known relation to total stocks. (*Mineral Resources of the United States, 1929*, vol. II, pp. 778-779.)

**M 98. Bituminous coal, number of mines, 1895-1956.**

Source: See general note for series M 13-274.

Figures include only mines producing 1,000 tons per year and over. Some data for smaller mines based on incomplete information are available, however (see *Minerals Yearbook, 1945*, p. 906).

The figure for 1954 may not be strictly comparable with those for other years. In 1954, the Bureau of Mines cooperated with the Bureau of the Census in the canvass for such information, and Census standards were employed. *Minerals Yearbook, 1954*, vol. II, states that "The Bureau of the Census defined a mine as 'a working or group of workings at a given locality in which operations are conducted as a unit or are unified by common management or joint handling of some part of the mining or preparation process. Individual shafts, openings, or sites should not necessarily be considered as individual mines.' The Bureau of Mines has considered individual shafts, openings, or sites as individual 'mines'" (p. 27).

**M 99. Bituminous coal, mechanically cleaned, 1906-1956.**

Source: See general note for series M 13-274.

There are no mechanical cleaning plants at lignite mines. For 1927-1956, figures include coal cleaned at central washeries operated by consumers in Colorado and Pennsylvania. Although pneumatic cleaning began in 1919, no data were available; therefore, such cleaning is not included until 1924. Tonnage so cleaned, however, was small during this period. Figures for 1906 are probably incomplete since this is the first year in which statistics were collected.

**M 100. Bituminous coal, mechanically cut underground, 1891-1956.**

Source: See general note for series M 13-274.

**M 101. Bituminous coal, mechanically loaded underground, 1923-1956.**

Source: See general note for series M 13-274.

Data for 1923-1926 exclude tonnage handled by conveyors.

**M 102-106. Bituminous coal, employment, 1890-1956.**

Source: See general note for series M 13-274.

"Active period averages" exclude periods when the mine is closed and not in operation. The Bureau of Mines publishes two sets of employment statistics: One in conjunction with the Bureau's injury statistics, the other in conjunction with the Bureau's commodity statistics. The two sets have not always agreed because of somewhat different coverage. All employment figures published here are from the bituminous coal chapter of the *Minerals Yearbook* and *Mineral Resources of the United States* (not those associated with the Bureau's injury reports).

Beginning with 1952, series M 103-105 may not add to series M 102, since auger employment is included in the total but is not shown separately. Component figures for 1911 will also not add to the total because the Bureau of Mines has revised the figure for total employment, but not the component figures.

Employment data for 1946-1956 are not strictly comparable with figures for earlier years. *Minerals Yearbook, 1953*, vol. II, p. 49, describes this change as follows: "Beginning with 1946, the figures on employment represent the average number of men working daily. Each mine is asked to report the total number of man-shifts worked during the year and the number of calendar days the mine was active during the year. The total man-shifts are divided by the total days the mine was active to determine the average number of men working daily. Before 1946 each mine was asked to report the average number of men on the rolls per pay period and number of days the mine worked. In this instance men employed were multiplied by number of days to determine total man-shifts . . . . Sample tests indicate that the two sets of figures, however, are reasonably comparable . . ."

Data on the number of men employed in 1911 are from a special inquiry made by the Bureau of Mines in connection with its accident statistics.

Although data on average hours worked per day are not shown, nominal hours of work are available for most years in the sources cited above.

Figures for all other surface workers on active days (series M 105) include all surface employees at underground, strip, and auger mines other than those actually employed in the mining operation proper.

**M 107. Bituminous coal, man-days idle because of strikes, 1899-1956.**

Source: 1899-1926, *Mineral Resources of the United States*, annual volumes; 1927-1956, Bureau of Labor Statistics, records.

Data are believed to be substantially consistent although two different sources are used. (The Bureau of Mines figure for 1927 is 26,516,000 man-days.)

In 1943, the Bureau of Labor Statistics "established a cooperative arrangement with the Solid Fuels Administration which resulted in the receipt of additional strike leads. When this [latter] agency went out of existence, cooperative arrangements were made with coal associations and companies.

Prior to 1943, undoubtedly many of the small, short work stoppages went unnoticed as they are seldom recorded by the press, but the number of workers and idleness in these stoppages is undoubtedly small." (*Work Stoppages, Bituminous Coal Mining Industry*, Report No. 95, August 1955, p. 7.)

"Memorial" stoppages which occurred in 1947 and 1952 are not included. For some early years (1899, 1901, 1903, 1907, and 1908), figures may include some anthracite since separation of the data was not possible.

**M 108-116. Bituminous coal, domestic consumption by consumer class, 1917-1956.**

Source: See general note for series M 13-274.

Data prior to 1933 may not be strictly comparable with those for more recent years because of significant revisions recently published and incorporated here for some of these series. Revised series are shown here for 1933-1956 for series M 112-116. See *Minerals Yearbook, 1957*, vol. II, pp. 120-121, for a description of these revisions.

M 108, total consumption. For 1933-1956, data are described by the Bureau of Mines as approximating total consumption. The Bureau states that any attempt to estimate total consumption of bituminous through the formula of production plus imports minus exports plus or minus net change in stocks omits important items such as stocks at lake and tidewater docks, stocks at other intermediate storage piles between mines and consumers, and coal in transit, since these items are not included in the stock figures. Therefore, total consumption is estimated through the addition of known consumption by consumer class.

Presumably for 1917-1932, consumption was estimated through the formula of production plus imports minus exports plus or minus net change in stocks, rather than through the addition of known consumption by consumer class. However, for these years components still add to the total consumption shown since the "all other uses" classification (series M 112-115) was obtained by subtracting the known consumption items from the total consumption estimate.

M 109, coal consumed by electric power utilities. For 1933-1956, this series is a Federal Power Commission series, and represents the latest available revised figures for bituminous coal and lignite consumed by public utility power plants in power generation, including a small quantity of coke. For 1917-1932, the series is a Geological Survey series and includes a small amount of anthracite (the Geological Survey figure for 1933 is 30,575,000 short tons). Data for 1917 and 1918 were estimated from the 1917 Census of Electrical Industries.

M 110, coal consumed by Class I railroads. For 1933-1956, figures are from the Association of American Railroads and represent consumption of bituminous coal and lignite by Class I railroads for all uses, including locomotive, powerhouse, shop, and station fuel. Data for 1917-1932, from the Interstate Commerce Commission, exclude consumption in shops, roundhouses, and stations, as well as all consumption by Class II and Class III roads. (The comparable Interstate Commerce Commission figure for 1933 was 66,198,000 short tons.)

M 111, coal consumed in coke plants. Separate series on coal consumption in beehive and byproduct ovens are also available in the sources for series M 108-116.

M 112-115, coal consumed in all other uses. For 1917-1932, figures are combined for bituminous coal consumed by cement mills, steel and rolling mills, other industrial, and retail dealer deliveries. The combined series was titled "all other uses" and was derived by subtracting the known consumption items from estimated total consumption (see text for series M 108).

M 114, coal consumed by other manufacturing and mining industries. For 1933-1956, figures are estimates based upon reports collected from a selected list of representative manufacturing plants.

M 115, coal consumption, retail deliveries to other consumers. For 1933-1956, figures are estimates based upon reports collected from a selected list of representative retailers. The figures include some coal shipped by truck from mine to final destination.

M 116, coal consumed in bunker foreign and lake vessels. This is a Bureau of the Census series and represents bunker coal loaded on vessels engaged in foreign trade. Such coal is not included in the export statistics and, therefore, is included under domestic consumption by use. Beginning 1933, lake vessels have been included.

M 117. Coke production, 1880-1956.

Source: See general note for series M 13-274.

Figures are collected through voluntary reports by coke-plant operators within continental United States. Coverage is limited to products made in high-temperature slot-type and beehive ovens. Coke made by other processes (in coal-gas retorts, by low temperature carbonization of coal, and carbonization of the residue from the refining of crude tar and petroleum) is excluded. In recent years, reports have been received from every oven-coke plant in operation and from most of the beehive plants that were in operation. Production has been estimated for the nonreporting plants (all small) and, therefore, coverage is presumed to be complete.

M 118-132. General note.

Coverage of anthracite statistics by the Bureau of Mines is limited to Pennsylvania and includes some coal from Sullivan County, Pa., which is classified as semianthracite. Information is obtained through a mail canvass of all known anthracite operators. Producers report directly about 99 percent of total production, the remaining 1 percent is estimated (see *Minerals Yearbook, 1950*, p. 353).

The presence of anthracite near the surface of the earth resulted in the development of "bootlegging"—mining without the consent of the owner of the mineral rights. This practice grew rapidly during the depression of the 1930's and although some information on "bootleg" operations was available during the 1940's, such production is not included in Bureau of Mines figures shown here. For 1941-1950, Bureau of Mines production data include only that part of "bootleg" production purchased by authorized operators and prepared at their breakers. For 1951-1956, however, output of these independent operators (no longer called "bootleggers" since they are now operating under legal agreements with the land owners) has been included. For 1951, output of this type was estimated at 1.5 million short tons. Estimates of "bootleg" production for earlier years may, however, be found in the *Minerals Yearbook*.

Employment statistics for Pennsylvania anthracite have been similarly affected by this change in coverage (see *Minerals Yearbook, 1951*, for a more complete discussion). As a result of this change in coverage, production and employment figures since 1951 are not strictly comparable with similar data for earlier years.

M 118-120. Pennsylvania anthracite production, 1808-1956.

Source: 1808-1885, H. N. Eavenson, *The First Century and a Quarter of the American Coal Industry*, Pittsburgh, 1942, pp. 426-434; 1886-1956, see general note for series M 13-274.

Total production of Pennsylvania anthracite consists of production from underground mines, strip pits, culm banks, and dredging. Since figures for the latter two methods are

not separately presented here, the figures for underground and strip do not add to total production. Also, see general note for series M 118-132 for discussion of "bootleg" production and its effects on total production. Underground production for the years 1915-1926 for which actual statistics are not shown in *Mineral Resources of the United States* was calculated by deducting the amount of coal mined from strip pits from the total reported fresh-mined coal as published in successive volumes of *Mineral Resources, 1915-1926*. Some anthracite production occurred in 1800-1807, but it amounted to less than 500 tons annually.

M 121. Pennsylvania anthracite, average value, f.o.b. mine, 1880-1956.

Source: See general note for series M 13-274.

Average value per short ton f.o.b. mine includes a reported value for coal not sold but used by the producer.

M 122-123. Pennsylvania anthracite, foreign trade, 1867-1956.

Source: See general note for series M 13-274.

Figures on imports and exports were compiled by the Bureau of Mines (or Geological Survey) from records of the Bureau of the Census. Import figures are "imports for consumption." For foreign trade definitions, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

For 1886-1956, figures are on a calendar-year basis; for 1867-1885, they are for fiscal years ending June 30. In order to obtain a comparable series throughout, data for 1867-1889 were converted from long to short tons.

M 124. Pennsylvania anthracite, net change in producers' stocks, 1913-1956.

Source: See general note for series M 13-274.

Figures represent net change in producers' stocks as of December 31, except 1913-1918 when changes are as of March 31. Information on producers' stocks has existed in different forms since 1913. In recent years, information has been supplied by the Anthracite Institute and the Anthracite Committee. Beginning with 1931, only annual stock totals have been reported in *Mineral Resources of the United States* and *Minerals Yearbook* necessitating the computation of the net change series. Data for 1930-1935 are from the records of the Anthracite Institute and represent prepared coal on the ground at the breakers. Data for 1913-1930 are from the Cost Reports of the Federal Trade Commission (*Coal No. 2*, p. 27) and *Hearings* before the Freylinghuysen Coal Committee, S. Res. 126, 66th Congress, 1st Session (part 1, p. 308).

M 125-129. Pennsylvania anthracite, employment, 1870-1956.

Source: 1870-1889, Bureau of Mines, *Coal Mine Fatalities in the United States, 1870-1914*, Bulletin 115, 1916, p. 290; 1890-1956, *Mineral Resources of the United States* and *Minerals Yearbook*, annual volumes.

Figures are "active period" averages, excluding periods when the mine is not in operation. Figures are not strictly comparable for 1951-1956 with earlier years because of inclusion, since 1951, of employees of independent operators (formerly known as "bootleggers"). See general note for series M 118-132.

Data for selected years since 1943 for the average number of hours worked per day are also presented in the *Minerals Yearbook*, chapters on Employment and Injuries, and data for nominal hours of work in earlier years appear in Barger and Schurr, cited in text for series M 13-37.

M 130. Pennsylvania anthracite, number of man-days idle because of strikes, 1900-1956.

Source: See source for series M 107.

**M 131.** Pennsylvania anthracite, mechanization, quantity cut by machines underground, 1911-1956.

Source: See general note for series M 13-274.

**M 132.** Pennsylvania anthracite, mechanization, quantity loaded by machines underground, 1927-1956.

Source: See general note for series M 13-274.

Figures were first collected by the Bureau of Mines in 1929. Figures for 1927-1928 were reported by the Pennsylvania Department of Mines.

**M 133-136.** Crude petroleum production, average value at well, and foreign trade, 1859-1956.

Source: 1859-1954, *Mineral Resources of the United States and Minerals Yearbook*, annual volumes; 1955-1956, Bureau of Mines, *Annual Petroleum Statement No. 422*.

**M 133,** production. In recent years coverage has been virtually complete as indicated in *Minerals Yearbook, 1953*, vol. II, which states that "complete coverage of production . . . was obtained by voluntary reports from the industry, supplemented by minor estimates" (p. 358).

**M 134,** average value at well. "Annual canvasses provided supplemental information on the value of crude petroleum at the well" (*Minerals Yearbook, 1953*, vol. II, p. 358).

**M 135,** imports. For recent years, this is a Bureau of Mines series representing only shipments into continental United States. For 1932-1933 and 1913-1926, the series is noted in the source as a Bureau of the Census series; for 1927-1931, the original source is not always indicated. For 1913-1922, *Mineral Resources* identifies the figures as "imports for consumption," but for other years, the precise identification is not always specified. For foreign trade definitions, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*. This series has been shown only since 1913 because crude and topped oil have been shown separately only since July 1912 (*Mineral Resources, 1922*, vol. II, p. 390).

**M 136,** exports. For 1920-1956, exports include shipments to Alaska, Hawaii, Puerto Rico, and other areas administered by the United States. Prior to 1920, the figures exclude such shipments; therefore, data prior to 1920 are not strictly comparable with those for later years. (For comparison, the 1920 export figure excluding territorial shipments is 8,757.) For 1928 and earlier years, reexports of foreign crude petroleum are included; prior to 1919 such reexports were negligible. For 1916 and earlier years, the figures include all crude mineral oils. Data for 1893-1896 represent fiscal years ending June 30; all other years presumably are calendar years.

**M 137.** Crude petroleum, estimated proved reserves, 1899-1956.

Source: 1899-1948, American Petroleum Institute, *Petroleum Facts and Figures, 1950*, New York, 1950, p. 182; 1949-1955, same publication, 1956 issue, p. 164; 1956, *Report of the American Petroleum Institute's Committee on Petroleum Reserves*, March 6, 1957 (mimeographed).

The *Minerals Yearbook, 1956*, vol. II (pp. 330-331), states that estimated proved reserves "include only oil recoverable under existing economic and operating conditions . . . . Includes crude oil that may be extracted by present methods from fields completely developed or explored enough to permit reasonably accurate calculations. The change in reserves during any year represents total new discoveries, extensions, and revisions, minus production."

For 1946-1956, figures are for crude oil only. Previously, estimates included some condensate. (The 1945 figure on the

new basis is 19,941,846,000 barrels.) The estimate for 1936 has been taken by the American Petroleum Institute from *The Lamp* (Standard Oil Company of New Jersey). Except for 1936, figures for 1935-1956 are estimates of the Committee on Petroleum Reserves of the American Petroleum Institute. For 1899-1934, figures are estimates of the American Petroleum Institute and are not based on geological surveys. The figure for 1899 is designated in the source as representing the entire period 1859-1899.

**M 138-147.** General note.

Bureau of Mines states, "Data on natural-gas production, consumption, and value are collected by annual questionnaires sent to producers of oil and gas, natural-gasoline-plant operators, gas-pipeline companies, and gas-utility companies . . . .

"Volumes are reported at the pressure base selected by the reporting company; however, if the reported pressure base deviates more than 5 percent from 14.65 pounds per square inch absolute at 60° F. it is corrected to this base.

"Reports are received covering approximately 75 percent of gross natural-gas production. The large number of respondents and the difficulty of contacting each small producer makes direct compilation of total production impractical. The bulk of the output of nonreporting producers is accounted for in the purchases of reporting companies." (*Minerals Yearbook, 1956*, vol. II, p. 282.)

**M 138.** Natural gas, marketed production, 1900-1956.

Source: *Minerals Yearbook*, annual volumes.

Figures comprise gas sold or consumed by producers, including losses in transmission, amounts added to storage, and increases in gas in pipelines. They are equal to gross production minus repressuring, vented and wasted. Figures for gross withdrawals may be obtained by summation of series M 138 (marketed production), series M 140 (vented and wasted), and series M 141 (repressuring).

Figures for 1900-1919 are not strictly comparable with those for later years. Apparently, for the earlier period, neither net storage change nor transmission loss was included.

**M 139.** Natural gas, average value at well, 1922-1956.

Source: 1922-1935 and 1951-1956, *Mineral Resources of the United States and Minerals Yearbook*, annual volumes; 1936-1950, Bureau of Mines, *Information Circular 7644*, p. 3.

This series is available only back to 1922, whereas the valuation series at the point of consumption extends back much further. Currently, the two series differ substantially. For 1956, the average value at the well was 10.8 cents per thousand cubic feet while the average value at the point of consumption was 41.5 cents. However, for earlier periods, the spread was not so great.

**M 140-141.** Natural gas, vented and wasted, and repressuring, 1920-1956.

Source: See source for series M 139.

Figures for vented and wasted gas are partly estimated. The data are compiled from information submitted by respondents, "supplemented by estimated waste derived from figures published by the Natural Gas Reserves Committee of the American Gas Association and State conservation bodies." (*Minerals Yearbook, 1956*, vol. II, pp. 284-285.) Figures include direct waste of producing properties and residue blown to the air.

**M 142.** Natural gas, estimated proved reserves, 1925-1956.

Source: 1925-1954, American Gas Association, *Historical Statistics of the Gas Industry*, New York, 1956, pp. 20-21;

1955-1956, *American Gas Association Monthly*, April 1958, vol. 40, No. 4, p. 8.

The definition of proved reserves is analogous to that for crude oil (see text for series M 137). For 1945-1956, figures are estimates by the Committee on Natural Gas Reserves of the American Gas Association. For 1925-1944, the source cites Lyon F. Terry, "Our Natural Gas Reserves," *Proceedings*, Natural Gas Department of the American Gas Association, 1944, p. 133; and Exhibit No. 445, Federal Power Commission Docket G-580, 1946 (witness E. De Golyer).

**M 143-147. Natural gas, consumption, 1906-1956.**

Source: See source for series M 139.

Total consumption figures can be computed by summing the figures for these component series. For 1920-1956, such totals would differ from series M 138 (marketed production) by extraction loss (in producing natural-gas liquids) net change in storage, transmission loss, and net imports or exports. Before 1920, the definition of consumption as compared to production is unclear. Such totals would also differ from series M 83, natural gas, dry (expressed in terms of B.t.u.'s), which includes transmission loss.

For 1906-1935, the residential figures (series M 143) appear in the source under "domestic consumption." The industrial field figures (series M 145) include the consumption of natural gas in drilling, pumping, and operating gasoline-recovery plants (estimated).

The figures for "other industrial" consumption (series M 147) were obtained for certain of the early years by adding component data shown in the basic source. In recent years, the source identifies these figures under fuel use. The figures include consumption in petroleum refineries, natural-gas pipelines, portland cement plants, electric utilities, and other industrial plants. For 1906-1929, data for public utilities consumption came from the Geological Survey, while other components were partly estimated.

**M 148. Natural gasoline and cycle products, production, 1911-1956.**

Source: *Minerals Yearbook*, annual volumes.

"Statistics on the production of natural-gas liquids were collected on both monthly and annual questionnaires from all natural-gasoline plants, cycling plants, and fractionators handling natural-gas liquids. Reports were not received for the liquids recovered at pipeline compressor stations and at gas-dehydration plants. Reports were received on the production of field condensate when this material was not commingled with the crude oil. Field condensate delivered to a plant and fractionated into finished products was reported as output of finished products." (*Minerals Yearbook*, 1956, vol. II, p. 301.)

Natural gasoline figures include all natural-gas liquids except liquefied petroleum gases. They, therefore, include such products as natural gasoline, natural gasoline mixtures, finished gasoline, naphtha, condensate, kerosene, and distillate fuel produced from natural gas. Beginning with 1954, isopentane previously included in liquefied petroleum gases is also included.

**M 149 and M 151. Natural gasoline and liquefied petroleum gases, average value at plant, 1911-1956.**

Source: Bureau of Mines, records. Published figures exist only for total natural-gas liquids, not for the components as shown in these series.

**M 150. Liquefied petroleum gases, production, 1941-1956.**

Source: 1941, 1942, and 1944-1956, *Minerals Yearbook*, annual volumes; 1943, Bureau of Mines, *Monthly Petroleum Statement No. 402*.

The reporting system underlying these statistics is the same as that described in the text for series M 148.

**M 152-167. Input and output of petroleum products at refineries, 1916-1956.**

Source: 1916-1930, Bureau of Mines, *Petroleum Refinery Statistics, 1930*, Bulletin 367, p. 15; 1931-1955, *Minerals Yearbook*, annual volumes; 1956, *Annual Petroleum Statement No. 422*.

The Bureau of Mines collects information on the petroleum refining industry in connection with its other oil and gas statistics. Complete coverage is secured through voluntary industry reports supplemented by minor estimates.

Series M 152 is the sum of petroleum refinery inputs, and excludes unfinished oils rerun (net). Series M 156 is the sum of all finished refinery products; unfinished products are excluded except that M 157 includes unfinished gasoline beginning with 1952. For 1916-1922, this sum was not computed because of incomplete data.

For 1952-1956, jet fuel components are excluded from series M 157-159 and jet fuel included in series M 167.

The conversion factors used by the Bureau of Mines for series M 161-165 were: Wax, 280 pounds = 1 barrel; coke, 1 short ton = 5 barrels; asphalt, 1 short ton = 5.5 barrels; and still gas, 3,600 cubic feet = 1 barrel.

**M 168-177. Petroleum products, imports and exports, 1920-1956.**

Source: 1920-1937, Bureau of Mines, *Monthly Petroleum Statement No. 402*; 1938-1955, *Minerals Yearbook*, annual volumes; 1956, *Annual Petroleum Statement No. 422*.

These figures represent imports and exports of continental United States. Thus, imports exclude imports into Territories and exports include shipments to Territories. The figures are compiled by the Bureau of Mines mainly from Department of Commerce records.

Total imports (series M 168) also include motor fuel, kerosene, lubricants, wax, asphalt, and other miscellaneous petroleum products not separately shown here. Total exports (series M 171) also include petroleum coke, petroleum asphalt, and other miscellaneous products not separately shown here. For 1932-1937, natural gasoline exports are excluded. For other years, they are included in gasoline (series M 172).

**M 178-194. Nonmetals, 1818-1956.**

Source: Except as noted below, successive *Mineral Resources of the United States* and *Minerals Yearbook*, annual volumes.

Of the large number of nonmetals, excluding fuels, only the more important ones and those for which adequate data exist have been included here. Although raw clays are among the more important nonmetals, the statistical series available are so inadequate as to result in their exclusion. For many commodities adequate production or shipments series exist and have been shown but satisfactory long-run average value or price series may not exist. Import and export series have been shown only where they are of considerable importance to the industry. Unless otherwise stated, figures for imports and exports were compiled by the Bureau of Mines (or Geological Survey) from records of the Bureau of the Census. For foreign trade definitions, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

M 178, cement shipments. Represents shipments of hydraulic cement for 1912-1956; for 1818-1911, represents production. Coverage includes natural cement since 1818, Portland cement beginning with 1870, slag cement (formerly referred to as puzzolan cement) beginning with 1896, and

hydraulic lime cement beginning with 1934. Includes prepared masonry cement made at natural- and slag-cement plants, and beginning with 1955, prepared masonry cement made at portland-cement plants. For 1818-1890, figures are estimated; for 1891-1956, they are based on practically complete returns from all producers (*Minerals Yearbook*, Statistical Appendix, 1935, pp. 178-179). For 1921-1956, the figures have been reported in barrels of uniform weight of 376 pounds. However, prior to 1921, the reports were not always uniform (see *Mineral Resources of the United States, 1916*, vol. II, pp. 342-343).

Figures include Hawaiian production for 1945-1946 and Puerto Rican production for 1939-1956.

M 179, average value of portland cement. Represents average value per 376-pound barrel of shipments from mills; value is that received f.o.b. mills excluding cost of the container. Figures for 1945-1946 include Hawaii and for 1939-1956, include Puerto Rico. Prior to 1926, figures were identified as "average factory value per barrel in bulk."

Portland cement shipments represented about 99 percent of the totals in series M 178 for 1953 and 1954, and between 94 and 95 percent for 1955 and 1956. (See text for series M 178 regarding change in coverage in 1955.)

M 180, crude gypsum mined. Represents crude gypsum mined and ready for calcining or for uncalcined use. Except for the first few years, coverage is believed to be complete. Excludes byproduct gypsum.

M 181, lime sold by producers. Since 1953, includes that used by producers. Includes quicklime, hydrated lime, and dead-burned dolomite. For all but the most recent years, the series represents mainly "open-market" sales and excludes most "captive" tonnage. For 1921-1952, only small quantities of "captive" tonnage were included, but beginning with 1953, coverage is assumed to be complete. For some years prior to 1921, the figures include lime produced and used by soda ash manufacturers. Data for 1889-1903 are not available, and the figures for 1880-1888 are considered much too high (see text for series M 24).

M 182, lime, average value per short ton. Represents the selling value f.o.b. plant excluding the cost of containers. Values for 1882-1888 were converted from average value per barrel at the kiln to an average value per short ton. The conversion factor used was 200 pounds = 1 barrel (*Mineral Resources of the United States, 1904*, p. 840). See also text for series M 24 and M 181.

M 183, sand and gravel sold or used. Includes both sand and gravel since 1905. For 1904, most sand producers were included, while for 1902, coverage was only partial. Data include commercial and government-and-contractor operations. For 1954-1956, includes ground sand (721,000 short tons in 1954). See also Bureau of Mines, *Development of the Sand and Gravel Industry*, Information Circular No. 7203, 1942.

M 184, stone sold or used by producers. Includes both dimension and crushed or broken stone and for 1916-1953, excludes that used for abrasives, lime, and cement. For 1954-1956, includes stone used for abrasives and in making cement and lime, and shell for various uses (95 million tons in 1954). Coverage includes granite, basalt, marble, limestone, sandstone, and others such as mica, schist, conglomerate, argillite, and various light-colored rocks.

M 185, sulfur production from Frasch mines. Although, for most years, virtually all of sulfur production has been from Frasch process mines, these figures do not represent total sulfur output. At present, quantities of sulfur are obtained from other mines, are recovered as elemental sulfur from coal and natural and refinery gases, in pyrites (see series

M 188), and as byproduct sulfuric acid and other byproduct sulfur compounds. In 1956 (in terms of thousands of long tons of sulfur content), Frasch production totaled 6,424; other mines, 60; recovered elemental, 465; pyrites, 432; sulfuric acid, 348; and other byproduct compounds, 89.

M 186-187, sulfur, crude imports and exports. Imports represent imports of crude sulfur and sulfur ore. As reproduced in *Minerals Yearbook*, the precise import definition was not always specified for 1937-1956. Prior to 1937, however, figures are for "imports for consumption."

Although no imports of sulfur ore were reported for most of the 1940's, processors stated that during 1941-1945 at least 2,000 tons of sulfur ore were imported from Mexico. Figures for 1867-1887 are on a fiscal-year basis ending June 30; for 1888-1956, on a calendar-year basis. For 1867-1884, pyrites imports are presumably included.

Exports of crude sulfur have been separately classified since 1905. The first shipment occurred in 1904 when 3,000 tons were shipped from Louisiana to France (*Mineral Resources of the United States, 1904*, p. 1079).

M 188, pyrites production. Figures for 1922-1927 have been corrected for flotation concentrates (*Mineral Resources of the United States, 1931*, p. 145).

M 189, pyrites imports. For recent years, figures are for pyrites containing over 25 percent sulfur. For early years, the restriction of not more than 3.5 percent copper content was placed on the import classification. For 1888-1890, pyrites were included under imports of iron ores. Prior to 1884, pyrites imports were classed with sulfur ore.

For 1904-1931 and 1935-1956, figures are for "imports for consumption." For 1884-1903 and 1932-1934, the precise definition of the import series is not always specified.

M 190, salt sold or used by producers. Coverage includes evaporated salt, rock salt, and the salt content of brine production.

M 191, potash sold by producers. Expressed in terms of K<sub>2</sub>O equivalent, which is the standard basis for comparison of different salts of widely varying composition.

M 192, potash imports. Represents crude and refined potash materials and is expressed in terms of approximate K<sub>2</sub>O equivalent. Figures are for "imports for consumption" and were first tabulated by the Department of Commerce in 1913 (see *Mineral Resources*, vol. II, 1917, p. 401). For 1905-1912, figures are based on information in a fertilizer industry report by the Federal Trade Commission.

M 194, phosphate rock exports. For 1940-1953, figures are from Bureau of Mines, *Mineral Facts and Problems*, Bulletin No. 556, p. 689. Generally, figures include high grade hard rock, land pebble, and other (colloidal matrix, soft phosphate rock, and Tennessee, Idaho, and Montana rock). However, sintered matrix is included only for selected years, while for 1941-1945 Florida soft rock, colloidal, and sintered matrix are excluded.

M 195-197. Iron ore, usable, production and shipments, 1860-1956.

Source: 1860-1898 and 1907-1956, *Mineral Resources of the United States* and *Minerals Yearbook*, annual volumes; 1899-1906, see source for series M 67-70, p. 278.

The Bureau of Mines publishes several iron ore production series. Crude iron ore production represents the mine product before treatment for removal of waste constituents. Figures for usable iron ore production shown here represent such output after treatment.

Ore varieties included are hematite, brown ore, and magnetite. For 1942-1956, figures include byproduct material from pyrites. For 1907-1956, coverage is restricted to ore containing less than 5 percent manganese. Prior to 1907, Bureau of Mines data include ores with a higher manganese content. However, the Barger-Schurr data presented here for 1899-1906 assures comparability back to 1899. For 1860-1898, figures very probably include ores with a higher manganese content.

Data for 1882-1888 are estimated. For 1885-1888, estimates are for consumption, not production, of domestic ores. Corresponding consumption estimates (in thousands of long tons) for 1882-1884 are: 1882, 8,700; 1883, 8,800; and 1884, 7,718. Figures for 1875 and 1881 were estimated by I. I. Bell, *Principles of the Manufacture of Iron and Steel*, 1884, p. 451, while figures for 1860, 1870, and 1880 are from decennial census reports.

**M 198. Iron ore, average value of shipments, 1889-1956.**

Source: See general note for series M 13-274.

Figures represent average valuation of shipments f.o.b. mine.

**M 199. Iron ore, price, Mesabi, non-Bessemer, 1894-1956.**

Source: American Metal Market, *Metal Statistics*, New York, 1919 and 1957 editions.

Prices are those at Lake Erie docks.

**M 200-201. Iron ore, foreign trade, 1872-1956.**

Source: See general note for series M 13-274.

Figures were compiled by the Bureau of Mines (or Geological Survey) from records of the Bureau of the Census. For 1935-1956, figures are for "imports for consumption"; for 1872-1934, sources (used here) do not always specify the precise definition of imports. For definitions of foreign trade, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

For some years during the 1940's, some pyrites cinder was included in imports. For 1879-1956, import data represent calendar years; but for 1872-1878, figures are for fiscal years ending June 30.

**M 202-203. Iron ore production, by mining method, underground and open pit, 1909-1956.**

Source: 1909-1929, N. Yaworski, O. E. Kiessling, C. H. Baxter, L. Eaton, and E. W. Davis, *Technology, Employment, and Output per Man in Iron Mining*, WPA-NRP Report E-13, Philadelphia, June 1940; 1930-1956, see general note for series M 13-274.

For 1942-1956, production is in terms of crude iron ore production. For 1909-1941, it is in terms of usable iron ore. For 1909-1940, some underground production may be included in the open pit figures; and, for a few other years, the statistical allocation of production by method accounted for somewhat less than the total production.

**M 204-206. Iron ore employment, 1880-1956.**

Source: 1880-1922, see source for series M 202-203 for 1909-1929, pp. 206, 215; 1923-1956, see general note for series M 13-274.

Figures are "active period averages," excluding periods when the mine was not in operation. Slight variations occur in coverage in some of the years. Figure for 1902 was estimated.

**M 207. Pig iron shipments, 1810-1956.**

Source: See general note for series M 13-274.

For 1910-1956, figures represent shipments; for 1810-1909, figures represent production. *Mineral Resources of the United States*, vol. I, 1910, p. 93, states: "The statistics for 1854 and

all succeeding years [through 1909] were collected by the American Iron and Steel Association; those for 1810, 1840, and 1850 are census figures; those for the other years are largely estimates by early statisticians." Figures exclude blast furnace output of ferroalloys.

**M 208. Pig iron, average price, 1799-1956.**

Source: American Metal Market, *Metal Statistics*, New York, editions for 1910, 1919, 1930, 1940, and 1957.

Several pig iron price series have been spliced together for presentation. For 1799-1843, the series shown is titled "charcoal pig iron," while for 1844-1907, the series is titled No. 1 Foundry, Philadelphia. For 1908-1956, quotations of "basic f.o.b. Valley furnaces" are shown. Price data are available for No. 1 Foundry, Philadelphia, to 1956, but it was considered preferable to show the price of "basic" pig iron, f.o.b. Valley for recent years (available only since 1908) because of its predominant importance today, and to splice this series with other price data for earlier years. The series spliced together do exhibit similar price movements for years in which overlap occurs. For 1799-1843, the series which is titled "charcoal" pig iron is noted in the source as representing best pig iron for 1799-1827, average of grades for 1828-1833, gray iron for 1834-1840, and No. 1 Foundry for 1841-1843. For 1844-1907, the series which is titled No. 1 Foundry, Philadelphia, is noted as referring to several different grades during the period; for 1844-1895, the series refers to No. 1 anthracite Foundry iron.

**M 209-210. Pig iron imports and exports, 1922-1956.**

Source: See general note for series M 13-274.

Figures were compiled by the Bureau of Mines (or the Geological Survey) from records of the Bureau of the Census. Prior to 1922, pig iron imports and exports were not shown separately from ferroalloys. For 1922-1932, the precise definition of imports was not always specified in *Minerals Yearbook*. For 1933-1956, figures are for "imports for consumption." For definitions of foreign trade, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

**M 211-224. Ferroalloying metals, 1868-1956.**

Source: See general note for series M 13-274.

Foreign trade figures are presented either for imports or exports, depending on the main direction of United States trade in the commodity. Unless otherwise stated, figures on imports and exports were compiled by the Bureau of Mines (or the Geological Survey) from records of the Bureau of the Census. The specific import series shown is either "imports for consumption" or "general imports" as indicated in the notes for the individual series. However, although not always indicated in the sources (used here), "imports for consumption" as shown in these series exclude imports for manufacture in bond and for subsequent export (classified under "imports for consumption" by the Bureau of the Census). For definitions of foreign trade, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

**M 211, manganese ore domestic output (gross weight).** For 1910-1956, figures represent mine shipments; for 1880-1909, they represent production. Coverage includes metallurgical, battery, and miscellaneous ores. For 1915-1956, figures include only ore containing 35 percent or more manganese; for 1880-1914, the percentage was 40. (See Barger and Schurr, cited above, for series M 67-70.)

**M 212, manganese ore imports (gross weight).** For recent years, figures are restricted to ores containing at least 35 percent manganese; for earlier periods, the manganese content is

not specified. For 1934-1956, figures represent "imports for consumption." For 1868-1933, the sources (used here) do not always specify a precise definition.

For 1868-1888, figures represent only Canadian shipments to this country; figures for total imports for this period are not available. For 1868-1872, figures are for fiscal years ending June 30. (Imports during fiscal 1873 were 939 short tons.)

M 213, chromite domestic output (gross weight). These figures represent shipments. Data for 1880-1889 are noted as estimates, while for 1890-1910, data are described as having an industry coverage of 95 percent. For 1910-1956, coverage is virtually complete. Prior to 1880, cumulative output (all from Pennsylvania and Maryland) amounted to 224,000 short tons.

M 214, chromite imports (gross weight). For 1884-1910 and 1938-1955, figures are for "imports for consumption." For 1911-1937, the sources (used here) do not specify a precise definition. For 1884-1885, figures are for fiscal years ending June 30.

M 215, tungsten concentrates domestic output (tungsten content). For 1910-1956, figures represent shipments. For 1900-1909, data are called "production." *Mineral Resources of the United States*, vol. I, 1910, p. 740, states that "The production of tungsten ores in this country from year to year can be fairly compared . . . only since and beginning with 1906, as before that date no effort had been made to reduce the ores to a common basis of concentration." Production figures, however, do exist back to 1900 even though considered unreliable. Figures for 1900-1909 were converted from tungsten concentrates to tungsten content on the basis of one short ton of 60 percent  $WO_3$  containing 951.72 pounds of tungsten.

M 216, tungsten concentrates imports. For 1923-1956, figures are in terms of tungsten content; for 1912-1922, gross weight. Figures are for "imports for consumption," except for 1934-1935, for which *Minerals Yearbook* does not specify a precise definition.

M 217, molybdenum ores and concentrates domestic output (molybdenum content). Figures shown are for shipments and are believed to represent complete coverage of the industry.

M 218, molybdenum ores and concentrates exports (molybdenum content). Figures include roasting concentrates. Export figures are not available prior to 1940 because molybdenum was not separately recorded in the export statistics, except that for 1939 gross weight of exports was recorded (see *Foreign Commerce and Navigation, 1939*, p. 520, and *Minerals Yearbook, 1940, Review of 1939*, p. 621). However, exports were of substantial importance.

M 219, vanadium ores and concentrates domestic output (vanadium content). Data shown are for shipments. For 1934-1935, figures represent the vanadium content of carnotite ores only (Bureau of Mines was not at liberty to publish other data); for 1927-1931, data are not available because publication would disclose individual returns. Production occurred prior to 1911, but data for the period are not available. Mine shipments of ores and concentrates for 1940-1956 were measured by receipts at mills and Government purchasing depots. In 1955, the *Minerals Yearbook* began to present (including data for the preceding 10 years) a recoverable vanadium production series. (In 1955, recoverable vanadium content totaled only 6,572,000 pounds compared to a total vanadium content of mine output of 9,965,000 pounds.)

M 220, vanadium ores and concentrates imports. For 1934-1955, figures are in terms of vanadium content; for 1918-1933, in gross weight. (In 1934, the vanadium content equaled 414,000 pounds compared to the gross weight of 3,508,000

pounds.) Figures are for "imports for consumption". The figure for 1918 represents July through December only (prior to 1918 imports of vanadium were not separately recorded).

M 221-224, nickel (content). The United States has been largely dependent on imports of ore, metal, and matte plus domestic secondary recovery from scrap for its supply of nickel. Some small quantities are also recovered as byproduct production of copper refining (in 1956, 623 short tons). Production from domestic ore has been of minor importance. However, in the past few years it has increased substantially (1953, 11 tons; 1954, 2,006 tons; 1955, 4,411 tons; 1956, 7,392 tons).

M 221, nickel secondary production (nickel content). For 1916-1918, coverage is incomplete, since the production of one large firm is only partly covered.

M 223, nickel imports (nickel content). Most nickel imports come from Canada. In 1956, 93 thousand out of 107 thousand short tons of metal, and all ore and matte imports were from Canada. Figures were compiled by the Bureau of Mines (or the Geological Survey) from records of the Bureau of the Census except that for 1950-1956, they include refinery residues, data on which are reported to the Bureau of Mines by importers. For 1926-1956, figures are for "imports for consumption"; for 1911-1925, *Mineral Resources of the United States* does not specify a precise definition. For 1926-1956, the nickel content is noted as estimated.

M 224, nickel, price, electrolytic (cents per pound). For 1913-1927, the source states that figures were computed from data from one large nickel company (by dividing the gross amount received by the total quantity sold). For 1925-1927, computed prices are for December 31; for 1913-1924, prices are for March 31. (The 1925 March 31 quotation was 28.83 cents per pound.) For 1928-1941, quotations are for 2-ton minimum lots in New York City. (The New York quotation for 1942 is 35 cents per pound compared to that of 31.5 cents in Canada.) For 1942-1956, figures represent price quotations to United States buyers by the International Nickel Co., Inc., for electrolytic nickel in carlots f.o.b. Port Colbourne, Canada. For 1942-1947, a duty of 2½ cents per pound is included in the quotation, and for 1948-1956, a duty of 2¼ cents is included.

M 225-230. Copper production, imports, and exports, 1845-1956.

Source: See general note for series M 18-274.

For maximum usefulness it is necessary to understand the interrelationships among the individual series shown for production and foreign trade. Figures are shown for different stages of the production process. Mine output is represented by the recoverable copper content of domestic ores mined. The total domestic output of primary metal from domestic and foreign ores (i.e., excluding secondary recovery from scrap) is represented by primary refinery output. The difference between primary refinery output and the recoverable copper content of mine output in any year is accounted for to some extent by time lags and changes in stocks in the different production stages and by the failure of mine output to include byproduct copper recovered in small amounts from other ores; but mainly, the difference measures the amount of new copper produced in the United States from foreign ores, concentrates, and other unrefined materials.

In addition to copper from primary sources, domestic supply includes copper recovered from scrap (called secondary production) either as unalloyed copper or in alloys and compounds. Two series are shown for secondary output: Total secondary production and recovery from old scrap only. The figures on

old scrap measure what the junk pile contributes to metal supply each year, while the difference between old scrap and total secondary production is new scrap—a body of material which, in effect, is continuously being recycled in the production and fabrication of copper metal and does not constitute a true addition to supply at any time.

Primary and secondary output together measure the supply of metal in the United States produced by domestic refiners from foreign and domestic ores and scrap. To measure the supply of refined metal available for consumption in the United States it is necessary also to account for foreign trade; hence, import and export series for the refined metals are shown. Figures on imports and exports were compiled by the Bureau of Mines (or the Geological Survey) from the records of the Bureau of the Census. For definitions of foreign trade, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States, 1946*.

**M 225**, copper production, mine (recoverable content). For 1906-1956, figures refer to the estimated recoverable copper content of domestically mined ores in continental United States and Alaska; for 1845-1905, figures represent smelter production of copper from domestic ores. The statistical differences between the two series are slight. They reflect time lags and changes in stocks in the two stages of production, and also small amounts of byproduct copper recovered at the smelter but not estimated as part of the recoverable content of mine output. (The comparable smelter figure for 1906 equals 458,903 short tons.)

**M 226**, copper production, primary refined from domestic and foreign ores. Figures represent total primary refinery production from both domestic and foreign ores in continental United States and Alaska.

**M 227**, copper secondary production, total. Figures represent secondary production from both new and old scrap.

**M 229**, copper refined imports. Figures represent imports of refined copper only. Imports of copper ore, concentrates, and various unrefined copper metallic materials have historically been of much greater significance than imports of copper refined in ingots, plates, or bars. Within the scheme here used for presenting copper data an approximation of unrefined imports can be obtained by subtracting recoverable content of mine output (series M 225) from primary refinery output (series M 226). For 1934-1956, figures are for "general imports"; for 1916-1933, the sources (used here) do not always specify a precision definition. Although the figures represent imports of refined copper, there have been minor changes in coverage, due to classification shifts during the long period covered.

**M 230**, copper refined exports. Although the figures represent exports of refined copper, there have been minor changes in coverage, due to classification shifts during the long period covered.

**M 231**. Copper price, New York, electrolytic, f.o.b. refinery, 1850-1956.

Source: 1850-1859, *Mineral Resources of the United States*, vol. I, 1929, p. A 123; 1860-1956, American Metal Market, *Metal Statistics*, 1919 and 1957 editions.

For 1850-1859, figures are for an unspecified grade of copper. The source cites Weed's *Copper Handbook*, vol. XI, p. 1339, as the basis for these data. For 1860-1899, figures refer to the New York price of Lake copper. In 1900, this price was 16.70 cents as compared with the electrolytic quotation of 16.54 cents. For 1900-1956, data are the average New York prices for electrolytic copper f.o.b. refinery.

**M 232-237**. Lead production, imports, and exports, 1801-1956.

Source: See general note for series M 13-274, except 1801-1927 for series M 233. Series M 233, 1801-1927, Bureau of Mines, *Economic Paper No. 5*, L. A. Smith, "Summarized Data of Lead Production," 1929, pp. 12-14.

The text for series M 225-230 above, which discusses the interrelationships among the copper production and foreign trade series, is also generally applicable to lead. The description of the method of and sources for the compilation of the foreign trade statistics also applies.

**M 232-233**, lead production. Series M 232 represents the estimated recoverable lead content of domestic mine output; series M 233 represents the total primary refinery output from both domestic and foreign ores and base bullion. The two series differ by the amounts of ore and unrefined lead which are imported into this country for domestic refining (covered in series M 233) and by the amounts of lead ore and concentrates consumed outside the refineries for such products as antimonial lead and lead pigments and salts (covered in series M 232). Other lesser differences between the two series reflect time lags, and differences in stock changes, at the two stages of production.

Series M 233 includes refined lead from foreign base bullion for 1891-1956 and lead refined domestically from foreign ore for 1886-1956.

**M 234**, lead, total secondary production. Figures include secondary production from both new and old scrap. They include lead recovered as refined metal and in antimonial lead and other alloys.

**M 236**, lead imports. Figures are for "imports for consumption" of refined lead in pigs and bars. However, although not always so indicated in the sources (used here), "imports for consumption" as shown in this series excludes imports for manufacture in bond and for subsequent export (classified under "imports for consumption" by the Bureau of the Census).

Although the figures purport to refer to refined lead in pigs and bars, the specific items included change frequently over the long period, and can be identified only by referring to the basic sources. For example, for 1867-1934, imports of old lead are also covered. Figures for many recent years include lead received by the Government and held in stockpile.

For 1867-1886, data are for fiscal years ending June 30.

**M 237**, lead exports. Figures represent exports of refined lead in pigs and bars. For 1909-1915, exports of lead refined domestically from foreign ores are not included. During this period, all such exports were recorded in the statistics of exports not as refined metal, but as ore and concentrates, i.e., the form in which they were imported. Hence, the figure for 1914 represents only exports of refined metal from domestic ore.

Although the figures purport to refer to refined lead in pigs and bars, the specific items included change frequently over the long period, and can be identified only by referring to the basic sources. For example, for 1920-1936, exports of old or scrap lead are also included. For 1851-1868, data are for fiscal years ending June 30.

**M 238**. Lead, price of pig lead at New York, 1812-1956.

Source: 1812-1879, W. R. Ingalls, *Lead and Zinc in the United States*, New York, 1908, p. 203; 1880-1956, American Metal Market, *Metal Statistics*, 1957, New York, 1957, pp. 507-509.

Price quotations are generally available both in St. Louis and in New York. New York prices are shown because of its proximity to the larger market.

**M 239-244. Zinc production, imports, and exports, 1858-1956.**

Source: See general note for series M 13-274, except 1858-1881 for series M 240. Series M 240, 1858-1881, Bureau of Mines, *Economic Paper No. 2*, E. W. Pehrson, "Summarized Data of Zinc Production," 1929, p. 19.

The text for series M 225-230, which discusses the interrelationships among the copper production and foreign trade series, is also generally applicable to zinc. The description of the method of, and sources for, the compilation of the foreign trade statistics also applies.

**M 239-240, zinc production, mine (recoverable content) and primary smelter slab zinc.** Series M 239 represents the estimated recoverable zinc content of domestic mine output; series M 240, the total primary smelter output (including electrolytic plants) from both domestic and foreign ores and base bullion. The two series differ by the amounts of ore and unsmelted zinc imported into this country for domestic smelting (covered in series M 240), and by consumption of zinc ore and concentrates outside the smelter directly in the production of zinc dust and zinc pigments and salts (covered in series M 239). Other lesser differences between the two series reflect time lags, and differences in stock changes, at the two stages of production. Coverage includes continental United States and Alaska.

For 1858-1903, smelter output (series M 240) is that from domestic ores only. For 1904-1905, an unknown quantity of smelter output from foreign ore is included. For 1906-1956, output from both domestic and foreign ores and base bullion is included.

**M 241, zinc, total secondary production.** Includes secondary production from both new and old scrap.

**M 243, zinc imports.** Figures are for "imports for consumption" of zinc blocks, pigs, and slabs. However, although not always so indicated in the sources, they exclude imports for manufacture in bond and for subsequent export (classified as "imports for consumption" by the Bureau of the Census).

For 1867-1885, figures are for fiscal years ending June 30.

**M 244, zinc exports.** Figures represent exports of zinc in blocks, pigs, and slabs. The specific items included, however, changed frequently over the long period and can be identified only by referring to the basic sources.

For 1864-1885, figures are for fiscal years ending June 30.

**M 245. Zinc, price of slab zinc at New York, 1853-1956.**

Source: 1853-1864, *Mineral Resources*, vol. I, 1929, p. A 123; 1875-1879, W. R. Ingalls, *Lead and Zinc in the United States*, New York, 1908, p. 342; 1880-1956, American Metal Market, *Metal Statistics*, 1957, New York, 1957, pp. 581-583.

Quotations for slab zinc are available both at St. Louis and in New York. New York prices are shown because of its proximity to the larger market.

**M 246-247. Gold and silver production, 1792-1956.**

Source: 1792-1834 and 1845-1903, Treasury Department, *Annual Report of the Director of the Mint*, 1910, p. 99; 1835-1844, for series M 246, Bureau of Mines, *Economic Paper No. 6*, R. H. Ridgway, "Summarized Data of Gold Production," 1929, p. 14; for series M 247, Bureau of Mines, *Economic Paper No. 8*, C. W. Merrill, "Summarized Data for Silver Production," 1930, p. 18; 1904-1956, Bureau of Mines, records.

For 1792-1903, figures represent production measured at the refinery stage; for 1904-1956, they represent production measured at the mining stage. The refinery figures are from the Bureau of the Mint and measure the metal from domestic ores and concentrates actually recovered in marketable form.

The mine output figures are from the Bureau of Mines and measure the recoverable gold and silver content of domestically produced ores, concentrates, and bullion. Differences between the two series primarily result from time lags between the two stages of production. Other differences exist because of the difficulty at the refining stage of determining the domestic or foreign origin of the ore. The Bureau of Mines figures are defined as "calculated upon the basis of recovered or recoverable fine gold and silver shown by assays to be contained in ore, bullion, and other material produced." (*Minerals Yearbook*, 1950, p. 564.) Bureau of the Mint data are defined as "official estimates of production of gold and silver in the United States . . . based upon arrivals at United States mints and assay offices and at privately owned refineries" (same source, p. 580).

Data include both lode and placer production in Alaska and continental United States but exclude production in all other Territories and possessions. The weight unit for both gold and silver is the fine troy ounce of 480 grains. No price series is shown for gold. In 1934, its official value was changed from \$20.67 to \$35 per fine ounce.

**M 248. Silver, New York average price, 1850-1956.**

Source: 1850-1883, *Mineral Resources of the United States*, vol. I, 1929, p. A 123; 1884-1956, American Bureau of Metal Statistics, *Yearbook*, 1933, and *Yearbook*, 1956, New York, 1934 and 1957, respectively.

In recent decades, most silver sold at this price has been of foreign origin since the U.S. Treasury buys domestically mined silver at a fixed price (in 1954, \$0.9050505 per fine ounce). For more complete information, see Bureau of the Mines, *Mineral Facts and Problems*, Bulletin 556, p. 791.

**M 249-258. Bauxite, aluminum, and magnesium, 1886-1956.**

Source: See general note for series M 13-274, except for series M 255. Series M 255, American Bureau of Metal Statistics, *Yearbook*, 1933, and *Yearbook*, 1956, New York, 1934 and 1957, respectively.

Figures on imports and exports were compiled by the Bureau of Mines (or Geological Survey) from records of the Bureau of the Census. The imports figures represent either "imports for consumption" or "general imports" as indicated in the notes for the individual series. However, although not always so indicated in the sources (used here), "imports for consumption" exclude imports for manufacture in bond and for subsequent export (classified as "imports for consumption" by the Bureau of the Census). For definitions of foreign trade, see introduction in Bureau of the Census, *Foreign Commerce and Navigation of the United States*, 1946.

**M 249, bauxite domestic output.** Figures represent production for 1919-1928 and 1940-1956, production or shipments for 1929-1934 (the terms are used interchangeably during this period), and shipments for all other years. For 1935-1956, figures are in terms of "dried bauxite equivalent"; for 1889-1934, they refer to bauxite "as shipped." Because of the widely differing moisture content of the different forms (crude, dried, and calcined), dried bauxite equivalent yields a more comparable measure of the quantity of bauxite produced or shipped.

Figures for 1889-1918 are from the 1918 volume of *Mineral Resources of the United States*, vol. I, p. 516, and are titled "shipments as revised by producers, December 1919." The source states that the figures "are believed to represent more accurately [than other available figures] the condition of the industry" (same source, p. 514).

**M 250, bauxite imports.** Imports of bauxite are of great importance; exports are insignificant. Figures represent

"imports for consumption" for 1938-1942 and 1946-1956. For 1898-1937 and 1943-1944, the source does not always specify a precise definition.

For 1934-1950, the figures are in terms of "dried bauxite equivalent," an adjustment in the Department of Commerce series made by the Bureau of Mines. Figures entirely adjusted to the dried bauxite equivalent are not available for other years. However, for 1952-1956, figures for imports from Jamaica (which have a high moisture content) have been adjusted and the remaining imports presumably include only a small amount of undried bauxite.

M 251, aluminum primary production. For 1896-1906, figures represent fiscal years ending August 31. Production for September-December 1906 totaled 2,734 short tons.

M 252-253, aluminum secondary production. Total secondary production represents recoverable content from both old and new scrap processed. For 1954-1956, figures represent recoverable aluminum content and are not strictly comparable with those for previous years which are for recoverable aluminum-alloy content.

M 254, aluminum imports, crude and semicrude. Aluminum imports include metals and alloys, crude; scrap; and plates, sheets, bars, etc. Figures are for "imports for consumption" for all years except 1911-1912, for which they represent "general imports." There have been minor changes in the description of coverage of the figures but the general description of imports of crude and semicrude is uniform throughout.

Exports have not been shown since they are minor as compared with imports. In 1956, exports of crude and semicrude, including scrap, the major component, totaled 68,032 short tons as compared with imports of 264,975.

M 255, aluminum, price of primary ingot. Represents average price of primary ingot in New York City.

M 256, magnesium primary domestic output. For 1939-1956, figures represent production; for 1915-1938, data are for new ingot sold or used. For 1943-1944, magnesium content of incendiary mixtures produced directly is excluded.

M 257-258, magnesium secondary domestic output. Secondary production of magnesium is expressed in terms of ingot equivalent and represents the recoverable magnesium and magnesium-alloy content of scrap processed. Total secondary output includes recoverable content of both old and new scrap processed.

M 259-264. Injuries and fatalities in all coal mining, 1870-1956.

Source: 1870-1954, Bureau of Mines, *Injury Experience in Coal Mining* and its predecessor, *Coal-Mine Accidents in the United States* (both issued as annual bulletins, with few exceptions, although the latter first appeared as a Technical Paper); 1955-1956, Bureau of Mines, records.

M 259-260, injuries, fatal and nonfatal. The Bureau of Mines began to gather information on nonfatal injuries in 1930. Data on number of fatalities go back to 1870 for anthracite and to 1874 for bituminous coal; availability of information on fatalities for the 19th century and the early years of the 20th century depended on the existence of State records, which, in turn, depended mainly on whether the States had mine inspection services.

For 1870-1909, the record of fatalities is incomplete for bituminous coal. Coverage appears to be high between 1901 and 1909—the records cover in the neighborhood of 98-99 percent of all production. Between 1895 and 1900, the fatality records cover about 95 percent of all production; by 1890, this percentage had fallen to almost 90 percent. Before 1890,

coverage seems to fall off considerably, particularly in the 1870's. For example, coverage of Pennsylvania bituminous coal mines does not begin until 1877. Records for Maryland and Ohio extend back to 1876 and 1874, respectively, while partial records are available for Virginia as early as 1839. Incompleteness since 1870 applies only to bituminous coal. Pennsylvania anthracite records are complete since 1870, with partial data available for 1847 and 1869 (Bureau of Mines Bulletin No. 115, pp. 7-9, 105).

Additional detail is available in the source bulletins as to the causes of injury, and information is shown classifying the nonfatal injuries into the categories of "permanent total disability," "permanent partial disability," and "temporary total disability."

M 261-264, frequency rates, fatal and nonfatal. The employment statistics used in deriving the injury and fatality frequency measures since 1890 are based on canvasses conducted by the Bureau of Mines (or the Geological Survey) with occasional figures from the Census of Mineral Industries. Although these underlying employment data are not presented here, they are available in the source bulletins. For almost all years between 1890 and the early 1930's, the underlying employment figures are those shown in series M 102-105 and M 123-128. In subsequent years, separate employment figures, collected on accident canvasses, were used for deriving the frequency rates. The latter employment figures differ somewhat from those shown in the bituminous and anthracite series (series M 102-105 and M 125-128). For 1870-1889, the frequency rates are based on employment statistics collected by the States which were less complete and presumably less accurate and comparable than those resulting from the Bureau's own canvasses in subsequent years.

M 261-262, frequency rates per million man-hours, fatal and nonfatal. The figures on man-hours of employment on which these ratios are based were derived as follows: Producers began reporting man-hours of employment to the Bureau of Mines in 1930, but during the early 1930's many mines left the man-hours question unanswered and even in the 1940's the man-hours were not always reported. For those mines not reporting man-hours, the Bureau estimated the figure by multiplying the average number of employees (active period average) by the number of days on which the mine was active, and then multiplying the product by the number of hours constituting a standard work shift in the particular mine. This method, with certain variations, was used by the Bureau to estimate man-hours in all years prior to 1930, when no direct information on man-hours was collected. Estimated man-hours, although reasonably accurate, suffered from two major shortcomings: (1) The number of active days was generally determined by the number of days on which the tippie was active; this omitted days on which no coal was brought to the surface, although on such days men were often employed under ground in loading coal or in repair or maintenance work, and (2) the standard work shift did not apply to all occupations, and many miners were irregular in observing standard working hours (see source, Bulletin 380, pp. 8-9; and Bulletin 283, p. 64).

The 1943 bituminous coal mine wage agreement made portal-to-portal time the basis for pay rather than face or working time hours. Since 1944, only portal-to-portal man-hours have been reported. Conversion factors were applied to man-hour data for underground bituminous employees back to 1930. No such adjustment was made, however, for surfacemen at underground mines or strip mine employees in the bituminous industry. No adjustment was deemed necessary in the anthracite industry.

M 263-264, fatalities per 1,000 300-day workers, and per 1,000 employed. The 300-day worker basis was derived by converting the average number of employees (active period average) according to the ratio between active mine days and 300 days. For the very early years, information on active days was not available, hence the simple measure of fatalities per 1,000 was employed.

For 1888 and earlier years, corresponding employment data are not available for all recorded fatalities. The rates are based on those fatalities for which corresponding employment data do exist. Apparently, comparable fatality and employment data exist for all Pennsylvania anthracite back through 1870.

Source bulletins also show fatality rates per million tons mined.

**M 265-268. Injuries and fatalities in quarrying and related industries, 1911-1956.**

Source: 1911-1953, Bureau of Mines, *Injury Experience in the Quarry Industry*, Bulletin No. 566, 1956; 1954, same publication, Information Circular No. 7842, 1958; 1955-1956, Bureau of Mines, records.

Separate figures are shown in the basic source according to the kind of rock produced and also for stone classified as dimension and nondimension. Nondimension stone includes all stone used in unshaped or irregular form, as for roadbuilding and cement and lime manufacture; dimension stone includes all stone that is cut or shaped for building or monumental purposes. By far, the major share of employment is in nondimension stone. The figures also cover crushing, screening, rock dressing, and the manufacture of cement and lime, insofar as these operations are conducted by the quarry companies; except for crushing and screening, these operations are classified as manufacturing in the *Standard Industrial Classification Manual*. On the other hand, quarries producing sand, gravel, and clay are excluded.

The source states that the data are comparable only since 1916 because information reported for prior years was obviously incomplete as to number of injuries, especially those causing disability for only one or two days. Additional detail is available in the source as to the causes of injuries, and the classification of nonfatal injuries, into the categories of "permanent total," "permanent partial," and "temporary total," the latter category being further divided, for 1915-1929, into the subclasses, "temporary disabilities lasting more than 14 days" and "temporary disabilities lasting more than the remainder of the day on which the accident occurred, but not exceeding 14 days."

The employment data used in deriving the injury and fatality frequency measures are comparable with the injury data. However, they must be carefully evaluated before they are used for other purposes. For an extensive discussion of the inadequacies of the underlying employment data see Barger and Schurr, cited earlier in the text for series M 13-37; see especially appendix C, pp. 377-398 of this publication.

**M 269-274. Injuries and fatalities in metal and nonmetal mines, 1911-1956.**

Source: 1911-1954, Bureau of Mines, *Injury Experience in the Metal and Nonmetal Industries*, and its predecessors: *Metal and Nonmetal Mine Accidents in the United States* and *Metal Mine Accidents in the United States* (all issued annually, with some exceptions, although the latter first appeared as a Technical Paper); 1955-1956, Bureau of Mines, records.

Employment and injury data for metal and nonmetal mines have been collected by the Bureau of Mines annually since 1911. Reports received by the Bureau are voluntary and cover all States and Alaska.

Separate figures are shown in the basic source by type of mining method and by cause of injury. Over the entire period, there have been numerous changes in the classification systems used. In addition, data are given by kind of mine, as follows: Copper, iron ore, lead-zinc, gold-silver lode, gold placer, miscellaneous metal mines, and nonmetal mines. Included under miscellaneous metal mines are those working ores of quicksilver, manganese, tungsten, vanadium, chromium, and other metals plus pyrite mines (the cinder is used in metallurgical works for its iron and copper content) and bauxite mines (the primary source of aluminum). The nonmetallic group includes mines that produce asbestos, asphaltum, barite, borax, emery, feldspar, fluorspar, garnet, graphite, gypsum, lithium, magnesite, mica, mineral paint, phosphate rock, potash, quartz, salt, soapstone, sulfur, talc, and tripoli.

Additional detail is available in the source bulletins as to the causes of injuries, and information is shown subclassifying the nonfatal injuries. For 1930-1956, nonfatalities have been recorded as temporary or permanent with the latter subdivided into total and partial disability. For 1915-1919, temporary injuries were separated into "serious"—of more than 14 days duration, and "slight"—of more than 1 but less than 14 days duration. For 1911-1914, nonfatalities were simply divided into "serious"—of more than 20 days duration, and "slight"—of more than 1 but less than 20 days duration.

Frequency rate measures were originally expressed per 1,000 men employed. Shortly thereafter, in an attempt to secure a uniform time basis for comparison, the Bureau of Mines began to express all frequency rates on a 300-day worker basis (derived by converting the average number of employees on active days according to the ratio between active mine days and 300 days). These rates were extended back through 1911. Rates per million man-hours of exposure are not available prior to 1931 in the reports, although partial man-hour data by length of shift are available from 1921-1930.

The employment data used in deriving the injury frequency measures are comparable with the fatality and injury records. However, they do not necessarily reflect total employment within the industry. Despite incomplete coverage, the data are considered by the Bureau to be representative of hazard exposure.

MINERAL OPERATIONS

M 1-12

Series M 1-12. Summary of Mineral Operations: 1840 to 1954

[In general, includes data for mining operations at manufacturing establishments. For all years prior to 1935, excludes common clay and shale and contract service operations; and for years prior to 1929, excludes sand and gravel operations and, except as indicated, crushed stone quarries at manufacturing plants]

Industry group and year	Value of shipments <sup>1</sup> (\$1,000,000)		Value added in mining (\$1,000,000)	Number of persons engaged			Principal expenses (\$1,000,000)				Capital expenditures for development and exploration of mineral property (\$1,000,000)	Aggregate horsepower rating of power equipment (1,000)
	Gross shipments	Net shipments		Production and development workers	All other employees	Proprietors and firm members	Wages of production and development workers	Salaries of all other employees	Cost of minerals received for preparation, supplies, purchased fuels and electric energy and contract work <sup>2</sup>			
	1	2	3	4	5	6	7	8	9	10	11	12
<b>ALL MINERAL OPERATIONS</b>												
1954.....	514,847	15,147	14,521	11,740	666,621	189,847	40,176	2,639	818	4,929	1,809	40,879
1939 <sup>3</sup> .....	861,202	( <sup>4</sup> )	3,438	2,680	774,130	82,259	16,040	971	204	758	( <sup>5</sup> )	14,160
1919.....	272,090	8,158	8,123	2,388	987,184	75,457	22,155	1,804	151	771	334	6,786
1909.....	193,567	1,212	1,184	912	956,856	45,119	33,691	570	56	300	( <sup>6</sup> )	4,700
1902 <sup>7</sup> .....	143,536	( <sup>8</sup> )	773	628	581,985	89,861	( <sup>9</sup> )	376	41	143	( <sup>10</sup> )	2,758
1889.....	59,217	( <sup>11</sup> )	415	335	506,973	21,434	( <sup>12</sup> )	217	( <sup>13</sup> )	80	( <sup>14</sup> )	( <sup>15</sup> )
1880 <sup>16</sup> .....	22,404	( <sup>17</sup> )	256	221	301,185	( <sup>18</sup> )	( <sup>19</sup> )	95	( <sup>20</sup> )	85	( <sup>21</sup> )	( <sup>22</sup> )
<b>METAL MINING</b>												
1954.....	3,356	1,506	1,361	1,076	81,896	18,854	3,525	353	110	576	65	5,113
1939.....	2,095	( <sup>23</sup> )	517	417	89,791	10,344	1,169	127	27	100	( <sup>24</sup> )	2,264
1919.....	2,007	( <sup>25</sup> )	684	496	115,775	9,313	313	178	27	187	60	1,736
1909.....	2,699	551	545	402	185,916	10,703	1,625	209	24	149	57	1,379
1902.....	14,638	369	350	251	160,842	10,202	8,557	135	15	118	( <sup>26</sup> )	1,141
1889.....	7,695	( <sup>27</sup> )	216	168	123,227	10,611	( <sup>28</sup> )	96	12	48	( <sup>29</sup> )	559
1880.....	( <sup>30</sup> )	( <sup>31</sup> )	158	131	108,032	6,104	( <sup>32</sup> )	58	6	27	( <sup>33</sup> )	174
1870.....	4,048	( <sup>34</sup> )	115	104	62,597	3,269	( <sup>35</sup> )	28	( <sup>36</sup> )	9	( <sup>37</sup> )	73
1860.....	( <sup>38</sup> )	( <sup>39</sup> )	47	41	39,907	( <sup>40</sup> )	( <sup>41</sup> )	20	( <sup>42</sup> )	6	( <sup>43</sup> )	22
1850.....	( <sup>44</sup> )	55	( <sup>45</sup> )	37	53,576	( <sup>46</sup> )	( <sup>47</sup> )	27	( <sup>48</sup> )	18	( <sup>49</sup> )	( <sup>50</sup> )
<b>COAL MINING</b>												
1954.....	8,107	2,477	2,098	1,615	232,681	23,614	10,098	879	131	860	5	7,838
1939.....	6,365	( <sup>51</sup> )	933	765	454,056	25,314	4,977	540	57	168	( <sup>52</sup> )	4,465
1919.....	6,661	( <sup>53</sup> )	( <sup>54</sup> )	( <sup>55</sup> )	527,864	23,786	1,532	523	47	142	( <sup>56</sup> )	( <sup>57</sup> )
1909.....	5,942	( <sup>58</sup> )	1,352	1,141	601,636	32,056	3,021	305	80	211	25	4,167
1902.....	8,842	1,510	1,510	1,252	693,641	40,977	4,401	893	82	258	37	3,058
1889.....	6,504	551	551	462	657,767	22,182	3,936	358	25	38	( <sup>59</sup> )	1,909
1880.....	6,052	( <sup>60</sup> )	367	328	350,754	17,476	( <sup>61</sup> )	220	17	39	( <sup>62</sup> )	955
1870.....	12,552	( <sup>63</sup> )	160	138	291,479	8,080	( <sup>64</sup> )	103	6	22	( <sup>65</sup> )	( <sup>66</sup> )
1860.....	( <sup>67</sup> )	( <sup>68</sup> )	96	84	179,989	( <sup>69</sup> )	( <sup>70</sup> )	56	( <sup>71</sup> )	12	( <sup>72</sup> )	132
1850.....	( <sup>73</sup> )	( <sup>74</sup> )	74	68	94,754	( <sup>75</sup> )	( <sup>76</sup> )	44	( <sup>77</sup> )	6	( <sup>78</sup> )	63
1840.....	( <sup>79</sup> )	( <sup>80</sup> )	20	17	36,486	( <sup>81</sup> )	( <sup>82</sup> )	10	( <sup>83</sup> )	8	( <sup>84</sup> )	( <sup>85</sup> )
1840.....	( <sup>86</sup> )	( <sup>87</sup> )	7	7	15,118	( <sup>88</sup> )	( <sup>89</sup> )	4	( <sup>90</sup> )	( <sup>91</sup> )	( <sup>92</sup> )	( <sup>93</sup> )
1840.....	( <sup>94</sup> )	( <sup>95</sup> )	( <sup>96</sup> )	( <sup>97</sup> )	6,811	( <sup>98</sup> )	( <sup>99</sup> )	( <sup>100</sup> )	( <sup>101</sup> )	( <sup>102</sup> )	( <sup>103</sup> )	( <sup>104</sup> )
<b>CRUDE PETROLEUM AND NATURAL GAS EXTRACTION</b>												
1954.....	493,611	9,342	9,284	7,674	235,433	80,252	19,824	977	486	3,031	1,230	20,101
1939.....	347,645	( <sup>105</sup> )	1,660	1,242	148,996	37,154	7,780	220	98	417	( <sup>106</sup> )	5,101
1919.....	257,673	932	903	614	93,659	17,952	14,319	135	34	318	237	1,827
1909.....	166,320	185	176	112	37,603	6,387	16,420	28	7	74	( <sup>107</sup> )	1,231
1902.....	123,149	( <sup>108</sup> )	102	59	22,438	5,120	( <sup>109</sup> )	16	5	43	( <sup>110</sup> )	1,014
1889.....	37,410	( <sup>111</sup> )	38	15	26,911	2,312	( <sup>112</sup> )	9	2	23	( <sup>113</sup> )	( <sup>114</sup> )
1880.....	15,009	( <sup>115</sup> )	25	18	11,477	( <sup>116</sup> )	( <sup>117</sup> )	7	( <sup>118</sup> )	7	( <sup>119</sup> )	( <sup>120</sup> )
1870.....	( <sup>121</sup> )	( <sup>122</sup> )	19	18	4,488	( <sup>123</sup> )	( <sup>124</sup> )	4	( <sup>125</sup> )	1	( <sup>126</sup> )	23
1860.....	( <sup>127</sup> )	( <sup>128</sup> )	4	2	922	( <sup>129</sup> )	( <sup>130</sup> )	( <sup>131</sup> )	( <sup>132</sup> )	2	( <sup>133</sup> )	( <sup>134</sup> )
<b>NONMETALLIC MINERALS (EXCEPT FUELS) MINING</b>												
All operations:												
1954.....	9,273	1,823	1,778	1,376	116,561	17,127	6,729	431	91	462	10	7,827
1939.....	5,097	( <sup>135</sup> )	323	256	81,287	9,113	2,164	83	22	67	( <sup>136</sup> )	2,330
1929.....	4,557	( <sup>137</sup> )	407	319	94,808	11,462	1,568	117	32	89	5	1,651
<b>Excluding sand, gravel, common clay, shale, and crushed stone quarries at manufacturing plants:</b>												
1954.....	4,267	1,224	1,180	919	76,051	11,194	3,205	277	62	322	8	4,617
1939.....	2,649	( <sup>138</sup> )	207	164	54,595	5,929	1,257	54	15	43	( <sup>139</sup> )	1,569
1919.....	2,980	( <sup>140</sup> )	264	207	66,714	7,495	1,295	79	20	57	5	921
1909.....	2,876	165	165	120	63,968	5,825	1,310	66	11	45	3	523
1902.....	6,105	107	107	87	100,644	6,343	4,778	49	7	20	( <sup>141</sup> )	420
1889.....	6,640	( <sup>142</sup> )	88	74	85,566	6,654	( <sup>143</sup> )	43	6	18	( <sup>144</sup> )	225
1880.....	( <sup>145</sup> )	( <sup>146</sup> )	59	51	85,551	4,938	( <sup>147</sup> )	33	( <sup>148</sup> )	9	( <sup>149</sup> )	79
1880.....	1,684	( <sup>150</sup> )	21	( <sup>151</sup> )	43,853	( <sup>152</sup> )	( <sup>153</sup> )	( <sup>154</sup> )	( <sup>155</sup> )	( <sup>156</sup> )	( <sup>157</sup> )	( <sup>158</sup> )

<sup>1</sup> The gross value of shipments contains duplication due to the transfer of crude minerals from one establishment to another for preparation. The figures for net shipments exclude this duplication. Figures for 1954 exclude the value of shipments for the uranium-radium-vanadium ores industry.  
<sup>2</sup> Received for preparation, supplies, purchased fuels and electric energy, and contract work. For 1954, represents purchased fuel only and excludes the cost of uranium-radium-vanadium ores received for preparation. For 1939, includes the value of fuels produced and used at the same establishment for power or heat.  
<sup>3</sup> Except for value of shipments and value added, excludes data for dimension stone dressing plants operated in conjunction with quarries. The value added in dressing stone at such operations was \$8 million; this value has been included in the value of shipments and value added in mining.  
<sup>4</sup> Not available.

<sup>5</sup> Includes data for 334 employees, paid \$1.1 million, at central offices which could not be distributed by industry.  
<sup>6</sup> Includes data for quarries and associated lime plants producing lime valued at \$9 million.  
<sup>7</sup> Figures for all other employees are included with those for production and development workers.  
<sup>8</sup> Excludes figures for operations not engaged in producing stone for building purposes.  
<sup>9</sup> Figures for 27 nonproducing establishments in the nonmetallic minerals (except fuels) mining industries are included with those for the metal mining industries.  
<sup>10</sup> Figures for 19 establishments in the metal mining industries are included with those for the nonmetallic minerals (except fuels) mining industries.  
<sup>11</sup> Less than \$5000,000.

Series M 13-37. Value of Mineral Products, in Current Dollars: 1880 to 1956

(In millions of dollars)

Year	Total mineral products	Fuels						Nonmetals (except fuels)				
		Total mineral fuels <sup>1</sup>	Bituminous coal and lignite	Pennsylvania anthracite	Petroleum	Natural gas	Natural-gas liquids	Total nonmetals <sup>1</sup>	Cement	Clay		Lime
										Raw	Products	
13	14	15	16	17	18	19	20	21	22	23	24	
1956	17,383	11,741	2,412	237	7,297	1,084	697	3,284	989	157		136
1955	15,807	10,780	2,092	206	6,870	978	619	2,972	884	140		127
1954	14,067	9,919	1,770	248	6,425	883	581	2,630	763	123		102
1953	14,418	10,257	2,248	299	6,327	775	598	2,350	698	125		112
1952	13,396	9,616	2,233	380	5,785	624	533	2,163	638	131		95
1951	13,529	9,779	2,622	406	5,690	543	508	2,079	612	129		97
1950	11,862	8,689	2,497	392	4,963	409	420	1,822	538	95		83
1949	10,580	7,920	2,134	358	4,675	344	402	1,559	475	75		69
1948	12,273	9,502	2,990	467	5,245	333	459	1,552	446	81		75
1947	9,610	7,188	2,620	413	3,578	275	295	1,338	357	71		63
1946	7,062	5,090	1,836	413	2,443	212	182	1,243	297	57	179	51
1945	6,231	4,569	1,768	324	2,094	191	188	888	175	40		86
1944	6,310	4,574	1,811	355	2,033	190	182	836	152	24		65
1943	5,931	4,028	1,585	307	1,809	177	147	916	202	25		75
1942	5,623	3,568	1,374	272	1,643	154	122	1,056	287	25	103	44
1941	5,107	3,228	1,125	240	1,602	139	119	989	251	25	185	43
1940	4,198	2,662	879	205	1,385	120	68	784	193	18		114
1939	3,808	2,423	728	187	1,294	120	90	754	184	15		123
1938	3,518	2,436	679	181	1,373	114	87	622	157	12		89
1937	4,265	2,798	864	198	1,513	123	97	711	171	16		109
1936	3,606	2,405	771	227	1,200	119	85	685	173	13		95
1935	2,942	2,013	658	210	961	110	71	564	115		156	22
1934	2,744	1,947	628	244	905	106	61	520	118		116	17
1933	2,050	1,413	446	207	608	97	54	432	86		95	14
1932	2,000	1,460	407	222	680	99	49	412	83		89	12
1931	2,578	1,620	589	296	551	108	64	671	143		178	19
1930	3,980	2,500	795	355	1,070	147	128	973	231		275	26
1929	4,908	2,940	953	386	1,280	158	158	1,166	255		373	33
1928	4,484	2,666	934	394	1,055	140	139	1,163	279		374	36
1927	4,698	2,875	1,030	421	1,173	127	119	1,201	282		404	39
1926	5,311	3,371	1,183	474	1,448	125	186	1,219	281		430	42
1925	4,812	2,910	1,060	328	1,285	112	120	1,187	281		423	43
1924	4,754	2,899	1,063	477	1,023	254	82	1,174	266		416	40
1923	5,252	3,317	1,515	507	978	240	77	1,157	260		425	40
1922	4,183	2,738	1,275	274	895	222	73	921	208		321	33
1921	3,828	2,703	1,200	452	815	175	62	780	182		271	25
1920	6,084	4,193	2,130	434	1,361	196	72	1,025	196		374	38
1919	4,007	2,511	1,161	365	760	161	64	752	147		275	29
1918	4,563	2,736	1,492	336	704	154	50	648	114		221	27
1917	4,131	2,238	1,249	284	523	142	40	666	123		233	24
1916	2,993	1,333	665	202	331	120	14	554	105		207	19
1915	2,078	973	502	185	179	101	5	429	75		163	14
1914	1,870	993	493	188	214	94	3	431	81		165	13
1913	2,092	1,088	565	195	237	88	2	467	90		181	15
1912	1,912	946	518	178	164	85	1	430	70		173	14
1911	1,675	836	451	175	134	75	1	407	67		162	14
1910	1,707	828	469	160	123	71		410	69		170	14
1909	1,571	746	405	149	123	63		386	54		166	14
1908	1,417	716	374	158	129	55		325	44		133	11
1907	1,667	789	451	164	120	54		376	56		159	13
1906	1,492	652	381	132	92	47		362	55		161	12
1905	1,313	602	335	142	84	42		319	36		150	11
1904	1,167	584	305	139	101	38		274	26		131	10
1903	1,215	634	352	152	95	36		272	32		131	9
1902	1,018	469	291	76	71	31		254	25		122	9
1901	960	442	236	113	66	27		219	16		110	8
1900	914	406	221	86	76	24		188	13		96	7
1899	798	341	168	88	65	20		185	13		96	7
1898	631	268	133	75	44	15		151	10		74	7
1897	574	254	120	79	41	14		128	8		62	6
1896	573	268	115	82	59	13		120	6		63	6
1895	555	268	116	82	58	13		126	5		65	7
1894	498	236	108	78	36	14		127	5		65	8
1893	480	252	123	86	29	14		70	4	( <sup>2</sup> )		( <sup>2</sup> )
1892	524	248	125	82	26	15		90	5	( <sup>2</sup> )		( <sup>2</sup> )
1891	504	237	117	74	31	16		83	5	( <sup>2</sup> )		( <sup>2</sup> )
1890	499	231	110	66	35	19		81	5	( <sup>2</sup> )		( <sup>2</sup> )
1889	456	208	95	66	27	21		83	5	( <sup>2</sup> )		8
1888	476	231	102	89	18	23		80	5	( <sup>2</sup> )		25
1887	448	217	98	85	19	16		77	6	( <sup>2</sup> )		23
1886	389	185	78	76	20	10		67	4	( <sup>2</sup> )		21
1885	374	183	82	77	19	5		62	3	( <sup>2</sup> )		20
1884	355	166	77	66	21	1		58	4	( <sup>2</sup> )		18
1883	383	186	82	77	26		( <sup>2</sup> )	61	4	( <sup>2</sup> )		19
1882	378	170	76	71	24		( <sup>2</sup> )	64	4	( <sup>2</sup> )		22
1881	340	150	60	64	25			61	3	( <sup>2</sup> )		20
1880	301	120	53	42	25			56	2	( <sup>2</sup> )		19

See footnotes at end of table.

MINERAL PRODUCTS

M 13-37

Series M 13-37. Value of Mineral Products, in Current Dollars: 1880 to 1956—Con.

(In millions of dollars)

Year	Nonmetals (except fuels)—Con.					Metals							
	Sand and gravel	Stone (incl. slate)	Phosphate rock	Salt	Sulfur	Total metals <sup>1</sup>	Iron ore	Copper	Lead	Zinc	Gold	Silver	Molybdenum
	25	26	27	28	29	30	31	32	33	34	35	36	37
1956	602	775	98	186	166	2,358	750	939	111	149	64	85	64
1955	536	715	75	123	177	2,055	749	745	101	127	66	84	67
1954	508	622	87	105	155	1,518	526	498	89	102	64	83	64
1953	374	489	77	78	150	1,311	790	532	90	125	69	84	52
1952	345	473	72	71	117	1,617	590	448	126	223	58	86	41
1951	330	448	65	70	112	1,671	630	449	134	249	61	86	36
1950	298	402	63	60	106	1,351	483	378	116	179	74	88	38
1949	246	352	51	54	86	1,101	378	297	130	149	62	81	19
1948	252	340	51	54	90	1,219	391	362	140	168	62	84	20
1947	213	298	47	52	85	1,084	318	356	111	153	64	82	15
1946	171	243	31	45	66	729	215	173	49	82	51	19	12
1945	129	185	24	44	61	774	244	185	46	80	33	21	24
1944	125	181	21	44	56	900	257	237	50	99	36	25	28
1943	153	189	19	42	47	987	269	258	52	102	49	29	38
1942	188	211	17	38	50	999	279	257	59	110	181	40	47
1941	147	203	16	34	54	890	250	228	54	98	209	51	26
1940	111	166	12	26	41	752	189	205	43	74	210	49	17
1939	106	165	12	25	36	631	159	148	40	51	196	44	22
1938	86	145	13	23	27	460	74	110	31	42	178	41	18
1937	97	152	13	24	44	756	208	202	52	72	168	56	21
1936	90	147	11	23	35	516	182	112	36	49	153	49	12
1935	62	91	11	22	29	365	83	63	25	36	126	33	7
1934	61	102	10	23	29	277	66	39	22	31	108	21	7
1933	53	84	8	22	30	205	64	29	19	26	65	8	4
1932	58	92	6	20	20	128	13	34	15	12	51	7	1
1931	86	141	9	22	25	287	74	95	29	22	50	9	2
1930	115	187	14	25	36	507	146	181	57	47	47	20	2
1929	133	214	13	27	44	802	197	353	85	31	46	33	2
1928	119	208	12	27	38	655	156	263	73	72	46	34	2
1927	116	210	11	25	38	622	151	221	84	74	45	34	2
1926	111	201	11	25	37	721	174	244	109	92	48	39	1
1925	108	187	12	26	29	715	161	238	114	84	50	46	1
1924	97	174	10	26	25	632	151	214	91	67	52	44	(?)
1923	91	172	12	28	26	778	241	211	76	69	52	60	(?)
1922	65	181	10	27	22	524	158	128	52	40	49	56	(?)
1921	56	114	12	25	17	344	90	65	36	20	50	53	(?)
1920	66	142	25	30	30	866	285	222	76	78	51	61	(?)
1919	46	103	12	27	10	744	197	239	45	66	60	64	(?)
1918	38	88	8	27	28	1,179	244	471	77	90	69	66	(?)
1917	35	88	8	20	24	1,228	238	515	94	119	84	59	(?)
1916	30	84	6	14	12	1,107	182	474	76	151	93	49	(?)
1915	23	80	5	12	5	677	101	243	48	114	101	37	(?)
1914	24	83	10	10	6	446	72	153	40	35	95	40	(?)
1913	24	90	12	10	6	533	131	190	36	38	89	40	(?)
1912	23	84	12	9	5	537	107	205	35	45	98	39	(?)
1911	21	83	12	8	5	432	87	137	35	31	97	33	(?)
1910	21	83	11	8	5	470	141	137	33	27	96	31	(?)
1909	13	77	11	8	5	439	110	142	30	25	100	23	(?)
1908	13	72	11	8	4	376	82	124	26	18	95	23	(?)
1907	14	77	11	8	5	501	132	174	37	26	90	37	(?)
1906	13	72	9	7	3	477	101	177	33	24	94	33	(?)
1905	11	69	7	6	3	392	75	139	29	24	88	34	(?)
1904	6	64	7	6	1	309	43	104	26	19	80	33	(?)
1903	1	64	5	5	1	309	66	96	24	17	74	29	(?)
1902	1	60	5	6	1	295	65	80	22	15	80	29	(?)
1901		52	5	7	1	299	49	101	22	12	79	33	(?)
1900		41	5	7	7	319	67	101	23	11	79	36	(?)
1899		39	5	7	7	272	35	97	18	15	71	33	(?)
1898		32	3	6	5	213	22	65	15	11	64	32	(?)
1897		30	3	5	5	193	19	59	14	8	57	32	(?)
1896		27	3	4	4	185	23	50	11	6	53	40	(?)
1895		29	4	4	4	161	18	41	10	6	47	36	(?)
1894		30	4	4	4	136	14	34	10	5	40	31	(?)
1893		36	4	4	4	153	19	36	12	6	36	47	(?)
1892		32	3	6	6	186	33	40	14	8	33	56	(?)
1891		50	4	5	5	184	32	36	15	8	33	58	(?)
1890		50	3	5	5	187	35	41	13	7	33	57	(?)
1889		46	3	4	4	164	33	31	12	6	33	47	(?)
1888		29	2	4	4	184	29	33	18	5	33	43	(?)
1887		23	2	4	4	153	34	25	18	5	33	41	(?)
1886		22	2	5	5	138	23	18	12	4	35	39	(?)
1885		21	4	5	5	129	19	18	10	3	32	43	(?)
1884		21	2	4	4	130	21	19	10	3	31	42	(?)
1883		22	2	4	4	136	26	19	12	3	30	40	(?)
1882		23	2	4	4	144	31	17	13	4	32	41	(?)
1881		24	2	4	4	130	24	13	11	3	35	38	(?)
1880		22	1	5	5	125	23	13	10	3	36	35	(?)

<sup>1</sup> Includes additional mineral products not shown separately, therefore components frequently will not add to group totals.

<sup>2</sup> Excludes certain clays, value of which is included in total nonmetals.

<sup>3</sup> Value of clays used in cement is included here, but is not included in total value of nonmetals. It has been excluded from the total value of nonmetals (series M 20) to avoid double counting since it constitutes part of the value of cement, series M 21.

<sup>4</sup> Estimated.

<sup>5</sup> Only incomplete figures available; these are included in total nonmetals.

<sup>6</sup> Not available separately; included with value of stone (series M 26).

<sup>7</sup> Less than \$0.5 million.

<sup>8</sup> As of 1954, sand and sandstone (ground) are, for the first time, included with series M 25 (sand and gravel) and M 26 (stone), respectively.

<sup>9</sup> Includes value of stone used for cement or lime, excluded from total nonmetals (series M 20).

## Series M 38-50. Value of Mineral Production, Imports, and Exports, in Constant Dollars: 1900 to 1957

[In millions of 1964 dollars. Includes Alaska]

Year	Total mineral production	Total, excluding gold			Mineral fuels			Nonmetals (except fuels)			Metallic minerals, except gold		
		Production	Imports	Exports	Production	Imports	Exports	Production	Imports	Exports	Production	Imports	Exports
		38	39	40	41	42	43	44	45	46	47	48	49
1957	15,556	15,498	8,771	1,576	11,548	1,633	933	2,310	292	122	1,635	1,846	521
1956	15,514	15,461	8,555	1,331	11,551	1,506	765	2,295	281	119	1,605	1,768	447
1955	14,688	14,622	8,171	1,089	10,905	1,303	597	2,138	268	106	1,579	1,600	386
1954	13,302	13,239	2,831	906	9,998	1,087	475	1,949	224	102	1,297	1,520	329
1953	13,854	13,786	2,990	857	10,366	1,064	553	1,806	245	78	1,614	1,681	226
1952	13,533	13,467	2,709	968	10,233	980	627	1,758	240	76	1,476	1,489	265
1951	13,677	13,608	2,305	1,028	10,346	866	717	1,696	288	84	1,566	1,151	227
1950	12,345	12,262	2,509	725	9,342	864	441	1,533	270	81	1,387	1,375	203
1949	11,064	10,995	2,006	798	8,459	670	484	1,338	191	73	1,198	1,145	241
1948	12,573	12,503	1,814	956	9,762	530	630	1,332	217	66	1,359	1,067	260
1947	12,028	11,955	1,496	1,268	9,357	457	880	1,284	159	66	1,314	830	372
1946	10,754	10,699	1,335	943	8,524	404	663	1,154	161	60	1,021	770	220
1945	10,332	10,349	1,533	991	8,595	373	666	963	152	47	1,291	1,058	273
1944	11,253	11,218	1,476	1,181	8,711	238	725	953	145	38	1,554	1,043	418
1943	10,334	10,787	1,466	937	8,012	190	566	1,014	200	37	1,761	1,076	354
1942	10,533	10,412	1,434	802	7,596	115	465	1,134	171	33	1,682	1,148	304
1941	9,965	9,800	1,781	719	7,260	233	417	1,086	149	44	1,454	1,349	258
1940	9,104	8,934	1,294	925	6,789	239	452	897	110	43	1,248	945	430
1939	8,180	8,017	875	1,012	6,204	177	604	837	93	44	976	605	364
1938	7,845	7,196	788	965	5,782	156	605	714	71	40	700	561	320
1937	8,584	8,441	985	936	6,458	170	559	789	123	48	1,194	687	329
1936	7,642	7,511	937	676	5,905	170	431	733	91	39	873	676	206
1935	6,496	6,388	1,061	669	5,254	160	418	530	71	35	599	330	216
1934	6,022	5,925	640	642	4,965	148	332	511	55	34	449	437	226
1933	5,621	5,540	614	539	4,742	132	352	453	49	33	345	433	154
1932	5,129	5,048	450	499	4,308	214	340	439	34	25	301	202	134
1931	6,232	6,205	744	631	4,942	247	414	627	59	33	636	433	234
1930	7,479	7,404	825	908	5,602	302	522	820	33	39	982	440	347
1929	6,500	6,429	1,100	1,053	6,249	311	559	913	113	48	1,267	676	446
1928	7,805	7,731	938	1,049	5,739	254	531	855	94	37	1,137	640	431
1927	7,865	7,792	864	979	5,830	206	496	845	87	36	1,117	571	447
1926	7,797	7,719	966	1,003	5,725	239	555	803	107	27	1,191	620	421
1925	7,230	7,150	873	832	5,237	226	418	774	83	29	1,139	559	435
1924	6,947	6,862	890	905	5,137	263	431	703	83	23	1,022	539	451
1923	7,467	7,384	893	784	5,580	290	417	703	87	26	1,101	516	341
1922	5,475	5,395	948	597	4,065	404	230	555	62	25	775	432	292
1921	5,092	5,010	723	601	4,091	364	335	450	35	18	469	324	243
1920	6,332	6,250	899	732	4,710	303	436	533	74	29	1,007	517	317
1919	5,511	5,415	734	716	4,040	156	306	454	59	16	921	519	334
1918	6,408	6,296	694	862	4,581	115	334	449	43	14	1,266	536	514
1917	6,333	6,247	659	912	4,408	95	345	535	57	13	1,304	507	554
1916	5,992	5,833	590	760	3,971	66	319	564	62	11	1,303	462	430
1915	5,239	5,124	424	642	3,633	62	232	496	43	8	990	314	352
1914	4,950	4,796	411	635	3,515	53	261	509	57	17	772	301	357
1913	5,352	5,202	504	636	3,725	43	230	545	72	21	932	339	335
1912	5,000	4,845	457	612	3,460	25	242	512	65	15	873	367	355
1911	4,733	4,570	437	601	3,293	13	230	522	65	15	750	359	356
1910	4,767	4,608	433	509	3,267	13	191	513	65	13	823	355	305
1909	4,265	4,093	339	433	2,808	9	138	494	56	10	796	324	295
1908	3,972	3,817	314	463	2,773	10	131	423	39	11	621	265	271
1907	4,366	4,219	340	393	3,043	13	172	450	55	10	726	272	216
1906	3,394	3,731	357	333	2,571	11	151	446	61	9	714	235	223
1905	3,753	3,605	309	331	2,513	11	143	421	43	9	666	250	229
1904	3,309	3,173	266	330	2,260	10	126	376	42	9	537	214	245
1903	3,233	3,164	316	293	2,243	20	113	367	47	10	554	249	170
1902	2,376	2,741	312	303	1,320	16	110	373	50	9	543	246	134
1901	2,774	2,641	323	299	1,332	11	122	326	47	10	433	270	167
1900	2,536	2,453	235	326	1,664	11	117	315	39	8	474	235	201

MINERAL PRODUCTION

M 51-62

Series M 51-62. Indexes of Physical Volume of Mineral Production (Bureau of Mines): 1880 to 1956

[1947-49 = 100]

Year	Total minerals	Fuels	Nonmetals (except fuels)				Metals					
			Total	Construc-tion	Chemical	Other	Total	Ferrous	Nonferrous			
									Total	Base	Monetary	Other
51	52	53	54	55	56	57	58	59	60	61	62	
1956	125.8	120.5	172.4	179.5	163.4	185.9	117.2	116.5	117.6	116.2	94.9	207.0
1955	119.0	118.8	161.0	170.0	146.4	127.5	115.0	122.8	109.5	106.8	95.3	194.0
1954	107.9	104.0	146.4	152.4	140.9	107.8	97.6	95.5	99.0	93.2	98.6	205.2
1953	112.6	108.8	135.2	137.5	133.6	118.5	119.1	133.3	109.2	103.0	98.3	236.7
1952	110.9	107.8	132.1	134.6	127.7	124.2	112.7	109.5	114.9	109.4	97.4	251.8
1951	112.6	110.1	127.3	128.3	123.9	180.0	117.2	126.6	110.6	110.0	100.8	149.7
1950	102.6	100.1	116.1	117.9	112.9	110.0	108.8	106.1	110.7	109.0	117.4	118.9
1949	92.1	90.7	101.0	102.8	95.2	93.5	94.1	91.2	96.1	95.7	97.2	98.9
1948	105.9	105.5	108.4	108.3	108.0	106.8	104.4	108.6	101.4	101.7	100.6	99.0
1947	101.9	102.8	95.6	94.0	98.8	99.7	101.6	100.3	102.5	102.5	102.1	102.1
1946	91.0	93.5	83.6	82.1	84.2	89.7	78.9	77.6	78.2	81.0	78.2	83.3
1945	92.0	94.8	70.2	64.1	82.2	72.1	95.2	97.7	90.0	97.4	55.6	142.3
1944	95.4	96.3	69.9	65.5	81.6	72.3	117.7	107.0	121.2	117.8	60.7	419.6
1943	92.5	88.9	75.9	74.0	75.6	82.0	136.4	119.4	148.1	130.2	78.3	595.7
1942	90.8	84.2	86.2	80.6	74.4	80.3	135.3	121.4	137.9	132.2	168.5	232.1
1941	86.1	80.5	81.3	86.5	67.9	79.1	124.8	102.7	134.3	121.1	220.2	116.4
1940	78.4	75.6	66.2	71.4	56.1	54.1	110.0	82.4	126.4	111.3	226.8	71.0
1939	70.8	69.3	61.1	63.9	46.5	47.3	90.2	59.5	111.7	94.6	215.5	47.2
1938	63.8	64.6	52.5	58.9	45.2	37.3	70.2	37.0	96.1	76.6	198.7	43.0
1937	73.8	72.2	58.0	60.4	50.7	57.3	102.8	79.2	115.9	107.2	199.1	45.8
1936	66.2	66.1	54.5	59.6	42.2	54.5	78.7	58.1	96.2	88.5	180.2	40.4
1935	55.9	58.9	38.5	38.7	35.5	41.6	57.3	33.7	75.0	60.7	151.8	35.6
1934	52.0	55.8	36.8	38.7	31.5	36.3	44.9	27.0	58.2	44.5	124.8	28.7
1933	48.2	53.1	32.0	32.3	29.2	35.1	35.4	15.9	48.3	38.3	100.8	18.7
1932	43.8	48.5	30.3	34.9	21.2	34.4	31.0	10.3	48.3	39.7	100.4	12.0
1931	54.3	55.7	44.2	49.7	33.0	36.2	54.6	31.7	71.9	72.4	101.5	19.5
1930	64.4	63.2	56.7	64.8	38.9	52.3	80.3	58.4	94.2	98.9	118.0	25.0
1929	72.5	69.9	62.9	74.3	37.7	56.7	103.0	72.3	123.1	131.5	128.8	26.4
1928	66.6	63.9	60.0	72.3	33.1	53.9	98.5	62.3	115.3	122.1	124.0	20.0
1927	66.8	64.6	59.6	72.6	31.8	51.3	91.2	61.8	111.5	117.6	124.2	14.3
1926	65.7	63.0	56.6	68.5	30.5	51.7	96.7	67.0	116.8	123.0	131.0	15.7
1925	60.5	57.2	53.4	65.2	27.1	50.8	93.1	62.0	114.9	119.4	137.2	13.8
1924	58.4	56.4	48.5	59.2	24.7	47.3	85.3	53.5	108.2	110.6	139.5	12.0
1923	62.1	60.7	48.4	56.8	29.6	44.8	89.7	63.2	102.3	102.3	143.9	13.6
1922	45.5	43.8	38.4	43.7	26.6	35.0	65.5	45.9	78.6	74.0	131.9	8.9
1921	42.9	44.6	31.1	35.2	22.6	24.5	43.3	28.5	58.9	44.6	120.0	6.0
1920	50.8	48.7	36.2	39.6	27.9	39.5	82.7	69.3	90.4	88.2	129.7	20.4
1919	43.9	41.2	31.2	34.9	23.4	29.3	78.7	63.5	88.4	83.9	137.8	19.4
1918	50.2	45.0	30.6	31.6	26.9	34.5	104.7	77.2	123.9	122.5	166.5	31.1
1917	49.8	41.6	36.7	42.2	26.3	35.4	112.2	85.6	131.2	125.8	191.9	35.3
1916	47.4	37.4	33.3	49.7	19.7	34.1	116.0	84.6	133.3	130.1	216.4	27.6
1915	41.8	33.9	36.5	49.5	16.2	27.7	93.9	61.8	116.4	100.8	223.6	19.3
1914	38.7	32.6	37.3	51.3	15.9	26.6	76.1	45.9	97.1	79.8	209.5	14.3
1913	41.5	34.3	39.3	53.4	17.4	29.4	86.5	68.6	99.5	82.3	207.0	15.5
1912	39.2	31.9	38.7	51.0	19.7	25.8	83.1	60.9	98.8	81.7	209.6	15.2
1911	36.5	30.3	35.3	50.2	14.1	24.0	74.7	48.5	98.1	78.5	212.7	13.6
1910	36.9	30.0	36.2	51.4	13.0	25.0	78.7	63.1	90.0	70.3	206.4	13.0
1909	34.8	27.5	35.2	50.0	12.9	22.5	77.5	56.8	92.3	72.2	213.8	12.4
1908	30.8	25.2	30.3	41.8	13.6	18.5	63.6	39.8	80.4	60.9	196.0	8.9
1907	33.2	27.5	32.1	45.1	12.2	22.3	63.3	54.7	76.4	57.0	189.8	11.4
1906	30.3	23.4	31.3	43.9	12.2	20.9	69.8	52.3	82.0	59.6	210.4	12.0
1905	29.0	22.8	30.1	42.6	11.4	17.7	64.9	46.9	77.6	57.6	194.0	12.5
1904	25.8	20.5	28.5	40.4	9.2	15.9	55.1	30.6	72.2	53.1	181.3	14.3
1903	25.7	20.3	26.1	38.4	7.8	16.1	53.8	33.6	64.6	46.3	167.5	14.5
1902	22.5	16.7	25.5	37.5	7.4	14.7	54.1	39.2	64.8	44.0	179.4	13.3
1901	21.9	16.9	23.0	34.6	6.5	14.5	49.9	32.0	62.3	40.6	176.6	11.4
1900	20.6	15.4	18.7	28.7	6.6	14.2	49.8	30.6	63.3	40.4	179.4	10.8
1899	19.6	14.8	18.5	30.1	5.9	9.8	45.7	27.4	58.5	37.1	164.1	12.2
1898	17.6	13.1	15.2	26.3	4.6	9.4	41.7	21.7	57.8	34.7	154.4	12.2
1897	16.7	12.3	15.2	23.4	4.0	7.5	38.7	19.5	52.1	32.6	143.5	10.4
1896	16.0	12.0	14.0	26.9	3.5	6.8	36.8	17.8	50.1	30.0	142.7	11.8
1895	15.5	11.9	13.8	28.0	3.6	6.7	33.5	17.8	44.6	25.7	129.9	13.8
1894	14.0	10.7	13.8	28.3	3.5	7.7	28.8	13.2	39.7	23.8	112.7	11.5
1893	14.5	11.2	14.4	30.4	3.2	6.9	29.1	12.9	40.3	22.8	119.3	11.4
1892	15.3	11.1	16.7	36.5	2.9	7.1	31.7	13.2	41.1	24.1	118.9	10.6
1891	14.5	10.9	15.9	35.2	2.5	7.4	29.0	16.3	37.8	21.1	113.4	8.6
1890	14.2	10.5	16.0	36.1	2.2	5.9	27.9	17.9	35.0	18.5	108.7	8.5
1889	13.3	9.9	14.8	33.1	2.1	4.0	26.1	16.3	33.0	17.1	104.0	9.8
1888	12.3	9.5	12.4	27.5	1.9	4.6	24.4	13.5	32.1	16.8	99.4	12.3
1887	11.7	9.1	12.2	27.0	2.0	4.4	22.5	12.8	29.4	14.3	94.7	12.5
1886	10.6	7.9	11.2	24.5	1.8	4.1	21.1	11.8	28.0	12.5	94.9	11.1
1885	9.4	6.7	10.8	23.4	2.1	4.2	19.3	8.6	26.8	12.8	87.3	11.9
1884	9.3	6.8	10.1	22.2	1.7	4.8	18.9	8.6	26.1	12.0	87.0	11.8
1883	8.9	6.6	9.5	21.6	1.5	3.9	18.6	9.8	24.8	10.7	83.6	17.3
1882	8.7	6.2	9.4	20.9	1.4	3.7	18.4	9.7	24.5	9.0	87.7	19.5
1881	7.7	5.2	9.1	20.3	1.3	3.8	17.2	7.9	23.7	7.8	87.5	22.5
1880	6.9	4.5	8.1	18.1	1.2	3.0	16.4	7.9	22.3	6.4	86.0	22.2

Series M 63-66. Indexes of Mineral Production (Federal Reserve Board): 1919 to 1956

(1947-49 = 100)

Year	Total minerals	Mineral fuels	Metal mining	Stone and earth minerals	Year	Total minerals	Mineral fuels	Metal mining	Year	Total minerals	Mineral fuels	Metal mining
	63	64	65	66		63	64	65		63	64	65
1956	129	129	114	141	1943	87	86	108	1930	59	59	86
1955	122	123	110	130	1942	84	82	127	1929	68	67	115
1954	111	113	90	123	1941	81	80	128	1928	63	62	108
1953	116	115	118	124					1927	64	63	99
1952	114	113	108	123	1940	76	74	115	1926	63	62	107
1951	115	114	116	127	1939	68	68	97				
					1938	62	65	74	1925	59	57	108
1950	105	103	108	114	1937	71	71	109	1924	57	56	92
1949	94	93	94	101	1936	63	65	87	1923	62	61	101
1948	106	106	105	104					1922	45		
1947	100	101	101	96	1935	55	58	62	1921	42		
1946	91	98	75		1934	51	54	50				
					1933	48	52	43	1920	53		
1945	92	93	86		1932	42	47	30	1919	45		
1944	93	95	97		1931	51	58	57				

Series M 67-70. Indexes of Mineral Production (NBER): 1899 to 1939

(1929 = 100)

Year	Total mining	Fuels	Non-metals	Metals	Year	Total mining	Fuels	Non-metals	Metals	Year	Total mining	Fuels	Non-metals	Metals
	67	68	69	70		67	68	69	70		67	68	69	70
1939	94.8	99.1	75.3	89.0	1925	82.7	81.1	83.3	89.9	1911	49.4	47.0	51.5	66.0
1938	85.3	92.7	68.9	70.0	1924	79.8	79.8	78.1	82.3					
1937	99.6	103.4	78.0	99.7	1923	84.8	86.1	75.6	85.1	1910	50.2	46.8	52.0	69.4
1936	88.5	94.5	71.4	77.4	1922	61.5	61.9	59.2	61.5	1909	47.4	43.1	50.3	67.7
					1921	57.2	61.6	48.7	39.3	1908	41.6	39.5	44.0	55.3
1935	75.4	84.1	52.2	57.4						1907	44.6	43.3	45.5	57.7
1934	69.7	79.8	49.4	44.2	1920	69.8	70.3	56.8	77.5	1906	41.2	37.3	43.7	59.1
1933	64.2	75.4	43.9	35.0	1919	60.1	59.6	46.4	73.3					
1932	59.2	69.3	43.6	30.2	1918	69.4	66.0	43.3	99.1	1905	39.6	36.2	36.3	56.1
1931	78.6	79.6	67.8	54.0	1917	69.0	63.6	55.5	102.9	1904	35.4	32.3	29.4	49.7
					1916	65.4	57.2	54.9	105.0	1903	34.5	32.5	25.3	47.7
1930	88.4	90.5	90.4	78.4						1902	30.6	27.1	22.8	47.7
1929	100.0	100.0	100.0	100.0	1915	56.7	52.1	49.9	84.3	1901	29.4	26.8	20.7	44.0
1928	91.8	91.4	95.1	91.4	1914	52.1	50.3	50.3	68.5					
1927	91.9	92.3	93.6	88.7	1913	55.9	58.0	55.4	76.3	1900	27.8	24.5	21.3	43.4
1926	89.6	89.0	88.2	93.5	1912	53.0	49.6	54.8	73.2	1899	25.7	23.0	19.7	39.7

Series M 71-87. Production and Calculated Consumption of Mineral Energy Fuels, Electricity From Waterpower, and Fuel Wood, in B.t.u.'s: 1800 to 1956

[In trillions of British thermal units. A British thermal unit (B.t.u.) is the quantity of heat required to raise the temperature of one pound of water 1°F. at or near its point of maximum density]

Year	Production							Calculated consumption									
	Mineral fuels				Electricity from waterpower			Mineral fuels						Electricity from waterpower		Fuel wood	
	Total mineral fuels	Bituminous coal	Pennsylvania anthracite	Crude oil	Natural gas, wet	At prevailing central station equivalent	At direct calorific equivalent	Total mineral fuels	Bituminous coal	Pennsylvania anthracite	Crude oil	Petroleum products, net imports <sup>1</sup>	Natural gas, dry	Natural gas liquids	At prevailing central station equivalent		At direct calorific equivalent
71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	
1956	39,968	18,123	784	15,181	10,930	1,542	427	40,409	11,338	610	16,994	424	9,834	1,209	1,598	443	
1955	37,453	12,174	665	14,410	10,204	1,447	397	38,459	11,104	599	15,956	372	9,232	1,196	1,497	410	1,067
1954	33,916	10,262	739	13,427	9,488	1,449	381	34,881	9,512	688	14,380	260	8,554	1,042	1,479	389	
1953	35,554	11,981	786	13,671	9,116	1,522	374	36,147	11,182	711	14,912	180	8,156	1,006	1,550	381	
1952	35,249	12,231	1,031	13,232	8,705	1,581	374	34,962	10,971	397	14,248	182	7,760	954	1,614	382	
1951	36,209	13,982	1,084	13,037	8,106	1,559	356	35,321	12,285	940	13,867	107	7,248	874	1,592	364	
1950	32,937	13,527	1,120	11,449	6,841	1,573	344	32,552	11,900	1,013	12,304	402	6,150	783	1,601	350	1,164
1949	29,151	11,472	1,085	10,683	5,911	1,539	323	30,039	11,673	958	11,402	57	5,289	660	1,565	329	
1948	34,490	15,707	1,451	11,717	5,615	1,481	297	32,487	13,622	1,275	12,085	-147	5,033	619	1,507	302	
1947	33,758	16,522	1,453	10,771	5,012	1,426	283	31,411	14,302	1,224	11,065	-262	4,518	564	1,459	290	
1946	30,133	13,989	1,537	10,057	4,550	1,406	284	29,048	13,110	1,369	10,270	-283	4,089	493	1,446	292	
1945	30,891	15,184	1,395	9,939	4,423	1,442	289	30,055	14,661	1,311	10,199	-580	3,973	491	1,486	298	1,261
1944	31,759	16,233	1,618	9,732	4,176	1,344	269	30,484	15,447	1,509	9,923	-662	3,775	442	1,387	278	
1943	29,575	15,463	1,540	8,733	3,839	1,304	270	29,095	15,557	1,450	8,538	-310	3,481	379	1,347	278	
1942	28,278	15,267	1,532	8,043	3,436	1,186	228	26,720	14,149	1,435	7,987	-320	3,102	367	1,177	236	
1941	26,198	13,471	1,432	8,133	3,162	934	182	25,650	12,393	1,338	8,343	-139	2,851	364	975	189	
1940	24,208	12,072	1,303	7,849	2,979	880	171	23,042	11,290	1,245	7,662	-175	2,726	294	917	173	1,353
1939	21,753	10,345	1,303	7,337	2,763	838	153	20,753	9,354	1,262	7,327	-486	2,539	257	872	165	
1938	19,911	9,132	1,171	7,043	2,565	866	161	19,008	8,311	1,148	6,921	-456	2,348	236	899	167	
1937	23,098	11,673	1,317	7,419	2,634	871	153	21,869	11,286	1,230	7,004	-400	2,463	231	905	164	
1936	21,679	11,504	1,336	6,373	2,411	812	147	20,594	10,697	1,351	6,426	-302	2,221	201	841	152	
1935	18,997	9,756	1,325	5,780	2,136	806	146	18,233	9,336	1,298	5,799	-300	1,974	181	831	150	1,397
1934	18,104	9,415	1,452	5,267	1,970	693	125	17,225	9,008	1,410	5,136	-318	1,319	170	721	130	
1933	16,935	8,741	1,258	5,253	1,733	711	127	16,177	8,323	1,260	5,143	-299	1,600	150	729	130	
1932	15,633	8,114	1,266	4,554	1,729	713	125	15,671	8,041	1,233	4,330	-240	1,594	163	726	127	
1931	13,331	10,011	1,515	4,936	1,869	663	114	13,112	9,743	1,484	5,304	-339	1,715	205	692	119	

<sup>1</sup> Minus sign (-) denotes exports exceeded imports.

MINERAL FUELS

M 71-87

Series M 71-87. Production and Calculated Consumption of Mineral Energy Fuels, Electricity From Waterpower, and Fuel Wood, in B.t.u.'s: 1800 to 1956—Con.

[In trillions of British thermal units]

Year	Production							Calculated consumption									
	Mineral fuels					Electricity from waterpower		Mineral fuels							Electricity from waterpower		Fuel wood
	Total mineral fuels	Bituminous coal	Pennsylvania anthracite	Crude oil	Natural gas, wet	At prevailing central station equivalent	At direct calorific equivalent	Total mineral fuels	Bituminous coal	Anthracite	Crude oil	Petroleum products, net imports <sup>1</sup>	Natural gas, dry	Natural gas liquids	At prevailing central station equivalent	At direct calorific equivalent	
	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	
1930	21,367	12,249	1,762	5,208	2,148	762	122	21,506	11,921	1,718	6,148	-498	1,969	246	785	128	
1929	23,852	14,017	1,875	5,842	2,118	816	128	22,911	13,612	1,815	5,894	-600	1,942	248	847	183	-----
1928	21,997	13,120	1,914	5,229	1,784	854	129	21,492	13,069	1,871	5,474	-711	1,588	201	890	184	-----
1927	22,424	13,565	2,084	5,227	1,598	776	111	21,018	13,095	1,897	5,027	-650	1,465	179	815	117	-----
1926	23,088	15,020	2,145	4,471	1,452	728	100	21,730	13,954	1,961	4,876	-545	1,335	149	765	105	-----
1925	20,939	13,625	1,570	4,480	1,314	668	87	20,198	13,079	1,627	4,641	-485	1,212	124	701	91	1,533
1924	20,309	12,672	2,283	4,141	1,263	648	77	19,768	12,681	2,050	4,228	-464	1,170	103	685	81	-----
1923	22,524	14,792	2,371	4,248	1,113	685	74	20,958	13,598	2,208	4,419	-389	1,082	90	727	79	-----
1922	16,529	11,063	1,389	3,284	843	643	67	16,540	11,186	1,443	3,390	-319	785	56	675	70	-----
1921	16,666	10,897	2,293	2,739	782	620	60	15,754	10,266	2,082	3,016	-342	682	50	656	63	-----
1920	20,627	14,899	2,276	2,569	883	738	64	19,007	13,325	2,179	3,027	-393	827	42	775	67	1,610
1919	17,441	12,206	2,288	2,195	802	718	58	16,792	11,688	2,113	2,159	-----	798	39	766	62	-----
1918	20,529	15,180	2,510	2,064	775	701	55	19,686	14,588	2,385	1,911	-----	771	31	750	58	-----
1917	19,737	14,457	2,580	1,945	855	700	58	18,842	13,835	2,378	1,755	-----	850	24	755	57	-----
1916	17,944	13,166	2,224	1,744	810	681	49	17,052	12,631	2,106	1,497	-----	807	11	729	52	-----
1915	16,163	11,597	2,260	1,630	676	659	45	15,385	11,134	2,160	1,411	-----	673	7	691	47	1,638
1914	15,559	11,075	2,307	1,541	636	636	42	14,858	10,703	2,198	1,320	-----	632	5	676	44	-----
1913	16,927	12,585	2,325	1,441	626	609	38	16,074	12,084	2,207	1,210	-----	620	3	645	41	-----
1912	15,333	11,793	2,143	1,293	604	585	35	15,098	11,402	2,038	1,058	-----	594	1	615	37	-----
1911	14,763	10,635	2,293	1,279	551	565	32	14,027	10,245	2,197	1,040	-----	544	1	597	34	-----
1910	14,336	10,923	2,146	1,215	547	539	29	14,261	10,654	2,060	1,007	-----	540	-----	539	29	1,765
1909	13,537	9,949	2,059	1,062	517	513	27	13,018	9,685	1,978	844	-----	511	-----	513	27	-----
1908	12,295	8,713	2,115	1,085	432	476	24	11,762	8,478	2,037	820	-----	427	-----	476	24	-----
1907	13,917	10,343	2,174	963	437	441	21	13,390	10,079	2,098	781	-----	432	-----	441	21	-----
1906	11,946	8,988	1,811	734	418	414	19	11,507	8,793	1,748	555	-----	411	-----	414	19	-----
1905	11,336	8,255	1,973	781	377	386	17	10,933	8,091	1,910	610	-----	372	-----	386	17	1,843
1904	10,171	7,301	1,858	679	333	354	15	9,816	7,155	1,797	534	-----	330	-----	354	15	-----
1903	10,205	7,408	1,895	583	319	321	13	9,924	7,315	1,843	449	-----	317	-----	321	13	-----
1902	8,685	6,818	1,051	515	301	289	12	8,426	6,733	1,030	364	-----	299	-----	289	12	-----
1901	8,316	5,917	1,714	402	283	264	10	7,996	5,808	1,657	250	-----	281	-----	264	10	-----
1900	7,643	5,563	1,457	369	254	250	10	7,322	5,431	1,410	229	-----	252	-----	250	10	2,015
1895	5,467	3,540	1,473	307	147	-----	3	5,265	3,511	1,439	168	-----	147	-----	90	3	2,308
1890	4,619	2,916	1,180	266	257	-----	1	4,475	2,903	1,159	156	-----	257	-----	22	1	2,515
1885	3,063	1,880	974	127	82	-----	-----	2,962	1,853	957	40	-----	82	-----	-----	-----	2,683
1880	2,210	1,330	723	152	-----	-----	-----	2,150	1,337	717	96	-----	-----	-----	-----	-----	2,851
1875	1,494	856	587	51	-----	-----	-----	1,451	862	578	11	-----	-----	-----	-----	-----	2,872
1870	1,074	536	507	31	-----	-----	-----	1,059	545	503	11	-----	-----	-----	-----	-----	2,893
1865	645	324	307	14	-----	-----	-----	642	323	304	10	-----	-----	-----	-----	-----	2,767
1860	519	237	279	3	-----	-----	-----	521	243	275	3	-----	-----	-----	-----	-----	2,641
1855	417	193	219	-----	-----	-----	-----	421	205	218	-----	-----	-----	-----	-----	-----	2,389
1850	216	106	110	-----	-----	-----	-----	219	110	109	-----	-----	-----	-----	-----	-----	2,133

Year	Production, mineral fuels			Year	Production, mineral fuels			Year	Production, mineral fuels	
	Total	Bituminous coal	Pennsylvania anthracite		Total	Bituminous coal	Pennsylvania anthracite		Total	Bituminous coal
	71	72	73		71	72	73		71	72
1845	122	55	67*	1825	12	11	1	1805	4	4
1840	64	35	29	1820	9	9	(?)	1800	3	3
1835	47	28	19	1815	7	7	(?)			
1830	23	17	6	1810	5	5	(?)			

<sup>1</sup> Minus sign (-) denotes exports exceeded imports.

Less than 500 billion B.t.u.

## Series M 88-101. Bituminous Coal—Production, Average Value, Freight Charges, Foreign Trade, Stocks, Number of Mines, and Mechanization: 1800 to 1956

[All figures are for short tons except number of mines]

Year	Production			Average value per ton, f.o.b. mine			Railroad freight charges per short ton	Foreign trade		Stocks at end of year	Number of mines	Mechanization		
	Total	Underground	Strip	Total	Underground	Strip		Imports for consumption	Exports			Coal mechanically cleaned	Coal mechanically cut underground	Coal mechanically loaded underground
	88	89	90	91	92	93		94	95			96	97	98
	1,000 tons	1,000 tons	1,000 tons					1,000 tons	1,000 tons	1,000 tons		1,000 tons	1,000 tons	1,000 tons
1956	500,874	365,774	127,055	\$4.82	\$5.20	\$3.74	\$3.45	356	68,546	78,008	8,520	292,365	309,523	307,402
1955	464,633	343,465	115,093	4.49	4.85	3.48	3.24	337	51,256	68,423	7,756	272,715	302,509	290,407
1954	391,706	289,112	98,134	4.52	4.87	3.52	3.23	199	31,041	69,201	6,130	232,764	256,822	242,970
1953	457,290	349,551	105,448	4.92	5.27	3.75	3.33	227	33,760	80,614	6,671	241,759	322,806	278,329
1952	466,841	356,425	108,910	4.90	5.24	3.81	3.35	262	47,643	76,745	7,275	227,205	340,462	268,994
1951	533,665	416,047	117,618	4.92	5.21	3.88	3.16	292	56,722	76,636	8,009	240,010	394,707	304,256
1950	516,311	392,844	123,467	\$4.84	\$5.15	\$3.87	\$3.09	347	25,468	72,516	9,429	198,699	363,809	272,725
1949	437,868	331,823	106,045	4.88	5.18	3.94	3.00	315	27,842	45,111	8,559	158,652	303,385	222,376
1948	599,518	460,012	139,506	4.99	5.26	4.11	2.74	291	45,930	69,373	9,079	180,880	417,435	295,806
1947	630,624	491,229	139,395	4.16	4.35	3.47	2.49	290	68,667	52,161	8,700	174,436	442,102	298,157
1946	533,922	420,958	112,964	3.44	3.59	2.87	2.27	435	41,197	47,157	7,333	138,670	382,134	245,341
1945	577,617	467,630	109,987	3.06	3.16	2.65	2.20	467	27,956	45,665	7,093	147,886	424,726	262,512
1944	619,576	518,678	100,898	2.92	3.01	2.48	2.21	634	26,032	57,204	6,928	158,727	469,458	274,189
1943	590,177	510,492	79,685	2.69	2.75	2.28	2.30	758	25,836	56,686	6,620	145,576	461,052	249,805
1942	582,693	515,490	67,203	2.36	2.41	1.90	2.31	498	22,943	55,889	6,972	142,187	462,345	232,903
1941	514,149	459,078	55,071	2.19	2.23	1.79	2.22	390	20,740	62,737	6,822	117,540	408,510	186,667
1940	460,772	417,604	43,167	1.91	1.94	1.56	2.22	372	16,466	50,998	6,324	102,270	369,227	147,870
1939	394,855	357,133	37,722	1.84	1.88	1.49	2.23	355	11,590	44,571	5,820	79,429	313,969	110,712
1938	348,545	318,138	30,407	1.95	( <sup>1</sup> )	( <sup>1</sup> )	2.27	241	10,490	40,720	5,777	63,455	278,315	85,093
1937	445,531	413,780	31,751	1.94	( <sup>1</sup> )	( <sup>1</sup> )	2.17	258	13,145	47,074	6,548	65,000	( <sup>2</sup> )	83,500
1936	439,088	410,962	28,126	1.76	1.77	1.49	2.25	272	10,655	42,926	6,875	61,095	348,332	66,977
1935	372,373	348,726	23,647	1.77	1.79	1.47	2.24	202	9,742	37,017	6,315	45,361	293,664	47,177
1934	359,368	338,578	20,790	1.75	1.76	1.49	2.15	180	10,869	34,476	6,258	39,827	284,677	41,433
1933	333,631	315,360	18,270	1.34	1.34	1.33	2.20	197	9,037	32,714	5,555	34,558	267,000	37,821
1932	309,710	290,069	19,641	1.31	1.31	1.32	2.26	187	8,814	29,666	5,427	30,278	243,955	35,817
1931	382,089	363,157	18,932	1.54	1.54	1.51	2.22	206	12,126	35,500	5,642	36,172	302,263	47,562
1930	467,526	447,684	19,842	1.70	1.71	1.54	2.23	241	15,877	37,200	5,891	38,800	362,425	46,982
1929	534,989	514,721	20,268	1.78	1.79	1.57	2.25	495	17,429	40,300	6,057	36,799	403,607	37,862
1928	500,745	480,956	19,789	1.86	1.87	1.69	2.27	547	16,164	41,800	6,450	28,783	369,687	21,559
1927	517,763	499,385	18,378	1.99	1.99	1.90	-----	550	18,012	55,500	7,011	27,692	374,041	16,500
1926	573,367	556,444	16,923	2.06	2.07	1.89	-----	486	35,272	55,000	7,177	( <sup>3</sup> )	410,913	10,545
1925	520,053	503,182	16,871	2.04	2.05	1.84	-----	602	17,462	49,000	7,144	( <sup>3</sup> )	366,726	6,243
1924	483,687	470,080	13,607	2.20	2.20	2.00	-----	417	17,100	45,000	7,586	( <sup>3</sup> )	356,271	3,496
1923	564,565	552,625	11,940	2.68	2.69	2.31	2.36	1,882	21,454	62,000	9,331	20,140	377,436	1,880
1922	422,268	412,059	10,209	3.02	3.02	3.07	-----	5,060	12,413	36,000	9,299	( <sup>3</sup> )	267,033	-----
1921	415,922	410,865	5,057	2.89	2.89	2.87	-----	1,258	23,131	48,000	8,038	13,629	272,702	-----
1920	568,667	559,807	8,860	3.75	3.74	4.12	-----	1,245	38,517	45,800	8,921	17,984	339,813	-----
1919	465,860	460,225	5,635	2.49	2.49	2.33	-----	1,012	20,114	24,000	8,994	16,884	276,020	-----
1918	579,386	571,098	8,288	2.58	2.58	2.54	-----	1,457	22,351	57,900	8,319	22,017	323,931	-----
1917	551,791	546,001	5,790	2.26	2.26	2.34	-----	1,448	23,840	25,484	6,939	25,484	306,396	-----
1916	502,520	498,587	3,933	1.32	1.32	1.51	-----	1,714	21,255	27,000	5,726	22,922	283,691	-----
1915	442,624	439,792	2,832	1.13	1.13	1.18	-----	1,704	18,777	-----	5,502	20,874	243,238	-----
1914	422,704	421,423	1,281	1.17	-----	-----	-----	1,521	17,590	-----	5,592	20,264	218,399	-----
1913	478,435	-----	-----	1.18	-----	-----	-----	1,768	18,013	-----	5,776	22,070	242,422	-----
1912	450,105	-----	-----	1.15	-----	-----	-----	1,456	16,475	-----	5,747	17,539	210,539	-----
1911	405,907	-----	-----	1.11	-----	-----	-----	1,973	13,260	-----	5,887	( <sup>3</sup> )	178,158	-----
1910	417,111	-----	-----	1.12	-----	-----	-----	1,820	11,663	-----	5,818	16,035	174,012	-----
1909	379,744	-----	-----	1.07	-----	-----	-----	1,375	10,101	-----	5,775	14,443	142,497	-----
1908	332,574	-----	-----	1.12	-----	-----	-----	2,219	11,071	-----	4,730	11,870	123,183	-----
1907	394,759	-----	-----	1.14	-----	-----	-----	1,893	9,870	-----	4,550	11,210	138,548	-----
1906	342,875	-----	-----	1.11	-----	-----	-----	2,039	8,014	-----	4,430	9,252	118,848	-----
1905	315,063	-----	-----	1.06	-----	-----	-----	1,705	7,513	-----	5,060	-----	103,396	-----
1904	278,660	-----	-----	1.10	-----	-----	-----	2,180	7,207	-----	4,650	-----	78,607	-----
1903	282,749	-----	-----	1.24	-----	-----	-----	4,044	5,836	-----	( <sup>3</sup> )	-----	77,975	-----
1902	260,217	-----	-----	1.12	-----	-----	-----	2,174	6,049	-----	( <sup>3</sup> )	-----	69,612	-----
1901	225,828	-----	-----	1.05	-----	-----	-----	2,215	6,455	-----	( <sup>3</sup> )	-----	57,843	-----
1900	212,316	-----	-----	1.04	-----	-----	-----	1,912	6,061	-----	( <sup>3</sup> )	-----	52,785	-----
1899	193,323	-----	-----	.87	-----	-----	-----	1,410	3,898	-----	3,245	-----	43,964	-----
1898	166,594	-----	-----	.80	-----	-----	-----	1,426	3,004	-----	2,862	-----	32,413	-----
1897	147,618	-----	-----	.81	-----	-----	-----	1,443	2,670	-----	2,454	-----	22,649	-----
1896	137,640	-----	-----	.83	-----	-----	-----	1,393	2,516	-----	2,599	-----	16,425	-----
1895	135,118	-----	-----	.86	-----	-----	-----	1,411	2,660	-----	2,555	-----	( <sup>3</sup> )	-----
1894	118,820	-----	-----	.91	-----	-----	-----	1,286	2,440	-----	( <sup>3</sup> )	-----	( <sup>3</sup> )	-----
1893	123,385	-----	-----	.96	-----	-----	-----	1,234	1,986	-----	( <sup>3</sup> )	-----	( <sup>3</sup> )	-----
1892	126,857	-----	-----	.99	-----	-----	-----	1,492	1,905	-----	( <sup>3</sup> )	-----	( <sup>3</sup> )	-----
1891	117,901	-----	-----	.99	-----	-----	-----	1,182	1,652	-----	( <sup>3</sup> )	-----	6,212	-----

<sup>1</sup> Includes coal cut by auger and continuous mining machines.  
<sup>2</sup> Includes coal cut by continuous mining machines.  
<sup>3</sup> Not available.

<sup>4</sup> March 1, 1920.  
<sup>5</sup> October 1.

BITUMINOUS COAL

M 88-101

Series M 88-101. Bituminous Coal—Production, Average Value, Freight Charges, Foreign Trade, Stocks, Number of Mines, and Mechanization: 1800 to 1956—Con.

[All figures are for short tons except number of mines]

Year	Production, total	Average value per ton, f.o.b. mine	Foreign trade		Year	Production, total	Year	Production, total	Year	Production, total
			Imports for consumption	Exports						
			88	96						
	<i>1,000 tons</i>		<i>1,000 tons</i>	<i>1,000 tons</i>	<i>1,000 tons</i>		<i>1,000 tons</i>		<i>1,000 tons</i>	
1890	111,802	\$0.99	1,047	1,272	1866	18,015	1848	1,615	1820	380
1889	95,685	.99	1,122	1,047	1865	12,349	1842	1,478	1819	320
1888	102,040	1.00	1,216	964	1864	11,415	1841	1,355	1818	380
1887	88,562	1.11	918	791	1863	10,480			1817	308
1886	74,645	1.05	909	610	1862	9,384	1840	1,345	1816	278
					1861	8,756	1839	1,251		
1885	71,778	1.18	861	765			1838	1,141	1815	258
1884	71,737	.94	889	724	1860	9,057	1837	1,070	1814	235
1883	64,860	1.07	723	519	1859	9,127	1836	1,067	1813	218
1882	58,917	1.12	891	352	1858	8,846			1812	208
1881	51,945	1.12	781	214	1857	8,775	1835	1,059	1811	188
					1856	7,992	1834	912		
1880	50,757	1.25	528	249			1833	823	1810	176
1879	40,425		545	309	1855	7,548	1832	771	1809	170
1878	36,418		642	332	1854	7,359	1831	695	1808	165
1877	34,385		555	360	1853	6,100			1807	159
1876	31,822		449	258	1852	4,909	1830	646	1806	152
					1851	4,590	1829	607		
1875	32,657		489	228			1828	569	1805	146
1874	30,733		551	405	1850	4,029	1827	582	1804	141
1873	31,601		515	272	1849	3,518	1826	498	1803	127
1872	27,311		548	158	1848	3,080			1802	122
1871	22,857		482	149	1847	2,631	1825	437	1801	114
					1846	2,328	1824	414		
1870	20,471		466	120			1823	370	1800	108
1869	19,908		490		1845	2,097	1822	360		
1868	16,244		441	97	1844	1,794	1821	349		
1867	13,837		571	108						

Series M 102-117. Bituminous Coal—Employment, Strikes, Domestic Consumption by Consumer Class; and Coke Production: 1880 to 1956

Year	Bituminous coal																
	Employment					Domestic consumption by consumer class (1,000 short tons)											Coke production (1,000 short tons)
	Average workers on active days				Average days worked	Man-days idle because of strikes (1,000)	Total	Electric power utilities	Rail-roads (Class I)	Coke plants	Cement mills	Steel and rolling mills	Other manufacturing and mining industries	Retail deliveries to other consumers	Bunker foreign and lake vessels <sup>1</sup>		
	Total	Under-ground	Strip	Surface, all other													
102	103	104	105	106												107	
1956	228,163	(2)	(2)	(2)	214	377	432,858	154,983	12,308	105,913	9,026	7,189	93,302	48,667	1,470	74,454	
1955	225,093	(2)	(2)	(2)	210	273	423,412	140,550	15,473	107,377	8,529	7,353	89,611	53,020	1,499	75,302	
1954	227,397	(2)	(2)	(2)	182	344	363,060	115,235	17,370	85,391	7,924	6,983	77,115	51,798	1,244	59,662	
1953	293,106	216,435	21,395	54,712	191	418	426,798	112,283	27,735	112,874	8,167	8,764	95,160	59,976	1,839	78,837	
1952	335,217	252,627	22,940	59,650	186	2,760	418,757	103,309	37,962	97,614	7,903	9,632	93,637	66,861	1,839	68,254	
1951	372,897	281,868	26,102	64,927	203	887	468,904	101,898	54,005	113,448	8,507	11,260	103,188	74,378	2,220	79,331	
1950	415,582	311,669	29,955	73,958	183	9,320	454,202	88,262	60,969	103,845	7,923	10,877	95,862	84,422	2,042	72,718	
1949	433,698	326,758	29,267	77,673	157	10,700	445,538	80,610	68,123	91,236	7,966	10,529	96,629	88,389	2,056	63,637	
1948	441,631	330,292	32,178	79,161	217	9,560	519,909	95,620	94,838	107,306	8,546	14,193	110,060	86,794	2,552	74,862	
1947	419,182	311,369	29,783	78,030	234	2,190	545,891	86,009	109,296	104,800	7,919	14,195	123,928	96,657	3,087	73,446	
1946	396,434	296,030	25,408	74,996	214	19,500	500,386	68,743	110,166	83,288	6,990	12,151	117,732	98,684	2,632	58,498	
1945	383,100	290,001	23,261	69,838	261	5,010	559,567	71,603	125,120	95,349	4,203	14,241	126,562	119,297	3,192	67,308	
1944	393,347	301,461	21,035	70,851	278	1,060	589,599	76,656	132,049	105,296	3,767	15,152	131,498	122,112	3,069	74,038	
1943	416,007	326,763	16,643	72,601	264	7,510	593,797	74,036	130,283	102,460	5,842	15,864	142,149	120,121	3,042	71,676	
1942	461,991	374,654	12,893	74,444	246	264	540,050	63,472	115,410	100,850	7,462	14,722	132,767	102,141	3,225	70,569	
1941	456,981	376,765	10,861	69,355	216	6,750	492,115	59,888	97,384	93,138	6,735	15,384	121,880	94,402	3,304	65,187	
1940	439,075	365,013	8,983	65,079	202	153	430,910	49,126	85,130	81,386	5,559	14,169	107,864	84,687	2,989	57,072	
1939	421,788	353,476	8,791	59,521	178	7,300	376,098	42,304	79,072	63,514	5,194	13,843	100,637	88,770	2,764	44,327	
1938	441,333	370,004	7,877	63,452	162	133	336,281	36,440	73,921	46,626	4,413	11,877	94,196	66,498	2,310	32,496	
1937	491,864	(2)	(2)	(2)	193	1,920	430,777	41,045	88,080	74,502	5,182	18,148	124,056	76,331	3,433	52,375	
1936	477,204	399,367	8,043	69,794	199	533	408,293	38,104	86,391	65,942	4,711	19,019	111,030	80,044	3,052	46,275	
1935	462,403	389,942	8,533	63,928	179	2,970	356,326	30,936	77,109	50,515	3,456	16,585	94,598	80,444	2,683	35,141	
1934	458,011	384,947	7,652	65,412	178	1,560	343,814	29,707	76,037	45,978	3,457	15,391	87,314	83,507	2,423	31,822	
1933	418,703	352,866	7,075	58,762	167	2,210	317,685	27,088	72,548	40,089	2,760	14,129	81,377	77,396	2,298	27,589	
1932	406,380	345,905	6,168	54,307	146	5,910	306,917	30,290	66,498	31,917		176,862		1,350	21,789		
1931	450,213	387,794	6,205	56,214	160	1,540	371,869	38,735	81,725	48,613		200,601		2,195	33,484		
1930	493,202	426,742	66,460		187	883	454,990	42,898	98,400	69,805		240,390		3,497	47,972		
1929	502,993	433,999	68,994		219	1,82	519,555	44,937	113,894	86,787		269,650		4,287	59,884		
1928	522,150	450,960	71,190		203	5,940	498,828	41,350	112,382	77,184		263,618		4,294	52,806		
1927	593,918	512,116	81,812		191	23,000	499,801	41,888	115,883	74,448		263,017		4,565	51,092		
1926	593,647	510,824	82,823		215	717	532,581	41,311	122,823	82,872		277,839		7,736	56,866		
1925	588,493	506,541	81,952		195	1,164	499,193	40,222	117,714	74,533		261,858		4,866	51,267		
1924	619,604	531,904	87,700		171	4,219	484,004	37,556	117,247	64,975		259,766		4,460	44,270		
1923	704,793	600,305	104,488		179	1,239	518,993	38,966	131,492	84,360		259,082		5,093	56,978		
1922	687,958	582,409	105,549		142	53,874	426,915	34,179	113,163	54,339		220,619		4,615	37,124		
1921	663,754	567,289	96,465		149	2,283	391,849	31,585	107,910	37,188		206,713		8,453	25,288		
1920	639,547	529,812	109,735		220	4,099	508,595	37,124	135,414	76,191		249,380		10,486	51,345		
1919	621,998	508,801	113,197		195	15,526	481,658	35,100	119,692	65,587		253,055		8,224	44,181		
1918	615,305	496,252	119,053		249	4,339	530,593	34,500	134,214	85,028		270,662		6,189	56,478		
1917	603,143	498,185	104,958		243	2,187	529,409	33,500	133,421	83,753		271,026		7,709	55,607		
1916	561,102	474,244	86,858		230	2,390										54,534	
1915	557,456	482,433	75,023		203	2,253										41,581	
1914	583,506	506,025	77,481		195	10,834										34,556	
1913	571,882	494,238	77,644		232	2,568										46,300	
1912	548,632	474,513	74,119		223	5,614										43,984	
1911	549,775	479,294	75,114		211	947										35,551	
1910	555,533				217	19,235										41,709	
1909	543,152				209	724										39,315	
1908	516,264				193	5,450										26,034	
1907	513,258				234	462										40,780	
1906	478,425				213	13,243										36,401	
1905	460,629				211	763										32,231	
1904	437,832				202	3,349										23,661	
1903	415,777				225	1,341										25,274	
1902	370,056				230	2,462										25,402	
1901	340,235				225	734										21,796	
1900	304,375				234	1,378										20,533	
1899	271,027				234	2,124										19,669	
1898	255,717				211											16,047	
1897	247,817				196											13,289	
1896	244,171				192											11,789	
1895	239,962				194											13,334	
1894	244,603				171											9,204	
1893	230,365				204											9,478	
1892	212,893				219											12,011	
1891	205,803				223											10,353	
1890	192,204				226											11,508	
1889																10,258	
1888																8,540	
1887																7,612	
1886																6,845	
1885																5,107	
1884																4,874	
1883																5,465	
1882																4,793	
1881																4,114	
1880																3,338	

<sup>1</sup> Includes lake vessels beginning with 1933.

<sup>2</sup> Not available.

PENNSYLVANIA ANTHRACITE

M 118-132

Series M 118-132. Pennsylvania Anthracite—Production, Value, Foreign Trade, Producers' Stocks, Employment, Strikes, and Mechanization: 1808 to 1956

Year	Production			Average value per ton, f.o.b. mine	Foreign trade		Net change in producers' stocks <sup>1</sup>	Employment				Man-days idle because of strikes	Mechanization, underground		
	Total	Underground	Strip		Exports	Imports for consumption		Average workers on active days					Cut by machines	Loaded by machines	
								Total	Underground	Strip	Other surface				Average days worked
118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	
	1,000 short tons	1,000 short tons	1,000 short tons		1,000 short tons	1,000 short tons	1,000 short tons					1,000	1,000 short tons	1,000 short tons	
1956	28,900	15,055	8,354	\$8.19	5,244	( <sup>2</sup> )	-378	31,516	17,171	4,840	9,505	216	56	400	7,308
1955	28,205	14,499	7,704	7.86	3,152	( <sup>2</sup> )	-573	33,523	19,952	4,642	8,929	197	9	394	6,661
1954	29,088	16,852	7,940	8.52	2,851	6	-377	43,996	27,294	4,587	11,865	164	76	851	6,978
1953	30,949	17,898	8,608	9.67	2,724	31	207	57,862	37,146	6,168	14,548	163	108	819	6,889
1952	40,583	24,748	10,697	9.36	4,592	29	726	65,923	43,120	7,100	15,708	201	104	886	10,084
1951	42,670	26,842	11,136	9.51	5,956	27	-286	68,995	45,438	7,647	15,865	208	81	496	10,848
1950	44,077	28,156	11,884	8.90	3,892	18	298	72,624	48,426	7,949	16,249	211	80	612	12,386
1949	42,702	27,081	10,877	8.38	4,943	-----	12	75,377	50,651	7,886	17,340	195	1,400	558	11,858
1948	57,140	37,175	18,858	8.17	6,676	1	262	76,215	51,629	7,005	17,551	265	274	1,017	15,742
1947	57,190	36,968	12,604	7.22	6,510	10	451	78,600	52,497	7,264	18,833	259	159	1,210	16,054
1946	60,507	38,084	12,859	6.83	6,497	10	121	78,145	51,996	6,152	19,997	271	649	1,233	15,619
1945	54,934	34,886	10,056	5.90	3,691	( <sup>2</sup> )	-315	72,842	48,000	5,314	19,528	269	1,163	1,210	18,928
1944	63,701	41,775	10,958	5.57	4,186	12	-116	77,591	51,656	5,595	20,340	292	827	1,386	14,975
1943	60,844	42,736	8,989	5.06	4,189	166	-469	79,158	54,206	5,084	19,868	270	1,836	1,625	14,746
1942	60,328	45,237	9,071	4.50	4,489	140	-476	82,121	58,926	4,526	18,669	239	226	2,296	14,741
1941	56,368	43,377	7,317	4.26	3,380	75	335	88,054	65,184	4,509	18,261	203	423	1,855	13,442
1940	51,485	41,517	6,353	3.99	2,668	135	-55	91,313	68,619	4,114	18,580	186	105	1,816	12,326
1939	51,487	42,572	5,486	3.64	2,590	298	-464	98,188	69,952	3,924	19,262	183	78	1,852	11,774
1938	46,099	38,142	5,095	3.92	1,909	363	-696	96,417	72,387	3,642	20,388	171	358	1,558	10,152
1937	51,856	42,566	5,696	3.81	1,914	398	-105	99,085	74,395	4,585	20,105	189	607	1,985	10,684
1936	54,580	44,727	6,208	4.16	1,678	615	348	102,081	76,127	4,667	21,287	192	265	2,168	10,828
1935	52,159	43,783	5,187	4.03	1,609	571	-10	103,269	78,058	4,091	21,120	189	789	1,848	9,279
1934	57,168	48,575	5,498	4.27	1,298	478	815	109,050	83,137	4,304	21,609	207	949	1,981	9,284
1933	49,541	41,032	4,882	4.17	1,035	456	-626	104,838	79,701	3,883	21,549	182	1,012	1,648	6,557
1932	49,855	43,834	3,981	4.46	1,308	607	-1,841	121,243	94,120	2,407	24,716	162	167	1,674	5,433
1931	59,646	58,460	3,813	4.97	1,778	638	98	139,431	109,280	2,232	27,919	181	655	1,587	4,385
1930	69,385	64,926	2,586	5.11	2,552	675	-119	150,304	118,750	32,054	-----	205	117	1,410	4,463
1929	73,828	69,964	1,912	5.22	3,406	487	-548	151,501	117,856	33,645	-----	228	239	1,160	3,470
1928	75,348	69,725	2,423	5.22	3,386	385	-1,254	160,681	123,896	36,735	-----	217	573	1,290	2,351
1927	80,096	78,658	2,158	5.26	3,326	119	2,218	165,259	127,197	38,062	-----	225	158	1,172	2,223
1926	84,437	78,059	2,401	5.62	4,030	814	4,000	165,336	126,231	39,155	-----	244	5,990	932	-----
1925	61,817	57,152	1,578	5.30	3,179	383	-5,040	160,312	120,568	39,744	-----	182	15,270	941	-----
1924	87,927	82,869	1,866	5.43	4,013	118	3,310	160,009	119,363	40,646	-----	274	1,144	1,424	-----
1923	98,339	88,009	2,263	5.43	5,090	300	1,635	157,743	114,721	43,022	-----	268	2,629	1,209	-----
1922	54,633	49,533	950	5.01	2,649	234	-4,630	156,849	114,279	42,570	-----	151	19,623	503	-----
1921	90,473	85,900	2,023	5.00	4,677	9	3,855	159,499	116,817	42,682	-----	271	823	503	-----
1920	89,598	80,454	2,054	4.85	5,404	32	-1,560	145,074	101,023	44,051	-----	271	1,815	958	-----
1919	88,092	81,055	2,007	4.14	4,977	88	1,680	154,571	107,829	46,742	-----	266	236	1,575	-----
1918	98,826	87,802	2,360	3.40	4,968	37	1,120	147,121	101,671	45,450	-----	293	70	1,858	-----
1917	99,612	90,164	2,302	2.85	6,007	13	-450	154,174	109,989	44,185	-----	235	161	1,955	-----
1916	87,578	80,981	1,988	2.31	4,666	6	-4,200	159,869	116,705	43,164	-----	253	955	1,840	-----
1915	88,995	83,973	1,122	2.07	3,965	1	-3,100	176,552	130,963	45,589	-----	230	215	1,308	-----
1914	90,322	-----	-----	2.07	4,290	18	2,500	179,679	133,309	46,370	-----	245	180	917	-----
1913	91,525	-----	-----	2.13	4,653	1	1,400	175,745	127,854	47,891	-----	257	432	556	-----
1912	84,362	-----	-----	2.11	4,131	2	-----	174,030	126,606	47,424	-----	231	6,913	246	-----
1911	90,464	-----	-----	1.94	3,980	3	-----	172,585	-----	-----	-----	246	37	70	-----
1910	84,485	-----	-----	1.90	3,384	9	-----	169,497	-----	-----	-----	229	16	-----	-----
1909	81,070	-----	-----	1.84	3,184	4	-----	171,195	-----	-----	-----	205	8	-----	-----
1908	83,269	-----	-----	1.90	3,088	18	-----	174,174	-----	-----	-----	200	-----	-----	-----
1907	85,604	-----	-----	1.91	3,022	11	-----	167,234	-----	-----	-----	220	-----	-----	-----
1906	71,232	-----	-----	1.85	2,433	36	-----	162,355	-----	-----	-----	195	5,958	-----	-----
1905	77,660	-----	-----	1.83	2,438	38	-----	165,406	-----	-----	-----	215	34	-----	-----
1904	73,157	-----	-----	1.90	2,496	81	-----	155,861	-----	-----	-----	200	84	-----	-----
1903	74,607	-----	-----	2.04	2,250	197	-----	150,433	-----	-----	-----	206	-----	-----	-----
1902	41,374	-----	-----	1.84	1,017	191	-----	148,141	-----	-----	-----	116	14,210	-----	-----
1901	67,472	-----	-----	1.67	2,233	( <sup>2</sup> )	-----	145,309	-----	-----	-----	196	-----	-----	-----
1900	57,368	-----	-----	1.49	1,353	( <sup>2</sup> )	-----	144,206	-----	-----	-----	166	3,500	-----	-----
1899	60,418	-----	-----	1.46	1,913	( <sup>2</sup> )	-----	139,608	-----	-----	-----	173	-----	-----	-----
1898	58,833	-----	-----	1.41	1,513	4	-----	145,504	-----	-----	-----	152	-----	-----	-----
1897	52,612	-----	-----	1.51	1,455	29	-----	149,884	-----	-----	-----	150	-----	-----	-----
1896	54,346	-----	-----	1.50	1,512	114	-----	148,991	-----	-----	-----	174	-----	-----	-----
1895	57,999	-----	-----	1.41	1,647	158	-----	142,917	-----	-----	-----	196	-----	-----	-----
1894	51,921	-----	-----	1.51	1,614	101	-----	131,603	-----	-----	-----	190	-----	-----	-----
1893	58,968	-----	-----	1.59	1,493	60	-----	132,944	-----	-----	-----	197	-----	-----	-----
1892	52,473	-----	-----	1.57	954	78	-----	129,050	-----	-----	-----	198	-----	-----	-----
1891	50,665	-----	-----	1.46	965	42	-----	126,350	-----	-----	-----	203	-----	-----	-----
1890	46,469	-----	-----	1.43	890	17	-----	126,000	-----	-----	-----	200	-----	-----	-----
1889	45,547	-----	-----	1.44	961	23	-----	123,676	-----	-----	-----	194	-----	-----	-----
1888	46,620	-----	-----	1.91	1,086	27	-----	122,218	-----	-----	-----	218	-----	-----	-----
1887	42,038	-----	-----	2.01	925	16	-----	106,517	-----	-----	-----	203	-----	-----	-----
1886	39,035	-----	-----	1.95	747	2	-----	103,044	-----	-----	-----	196	-----	-----	-----

<sup>1</sup> Minus sign (-) denotes decrease.  
<sup>2</sup> Less than 500 short tons.

<sup>3</sup> Estimated.

Series M 118-132. Pennsylvania Anthracite—Production, Value, Foreign Trade, Producers' Stocks, Employment, Strikes, and Mechanization: 1808 to 1956—Con.

Year	Production, total	Average value per ton, f.o.b. mine	Foreign trade		Employment		Year	Production, total	Year	Production, total
			Exports	Imports for consumption	Average workers on active days	Average days worked				
			118	121	122	123				
	1,000 short tons		1,000 short tons	1,000 short tons			1,000 short tons			1,000 short tons
1885	38,336	\$2.00	659	6	100,324	204	1859	10,092	1833	663
1884	37,157	1.79	727	2	101,073	192	1858	8,808	1832	502
1883	38,457	2.01	625	1	91,421	232	1857	8,618	1831	258
1882	35,121	2.01	620		82,200	218	1856	8,960		
1881	31,920	2.01	518	1	76,081	221			1830	235
							1855	8,607	1829	149
1880	28,650	1.47	440		78,373		1854	7,668	1828	103
1879	30,208		433	1	68,847		1853	6,653	1827	80
1878	21,690		358		68,964		1852	6,412	1826	61
1877	25,660		469	1	66,842		1851	5,814		
1876	22,793		378	2	70,474				1825	43
							1850	4,327	1824	15
1875	23,121		354		69,966		1849	4,172	1823	10
1874	24,267		450	1	53,402		1848	4,001	1822	6
1873	25,627		383	2	48,199		1847	3,726	1821	4
1872	24,734		291		44,745		1846	3,032		
1871	19,465		151	1	37,488				1820	4
							1845	2,626	1819	3
1870	19,958		186		35,600		1844	2,128	1818	3
1869	18,341		318				1843	1,656	1817	2
1868	17,708		215				1842	1,441	1816	2
1867	16,067		216				1841	1,262		
1866	15,784								1815	2
							1840	1,129	1814	2
1865	12,077						1839	1,072	1813	2
1864	13,027						1838	978	1812	2
1863	12,267						1837	1,164	1811	2
1862	10,186						1836	925		
1861	10,245								1810	2
							1835	760	1809	1
1860	10,984						1834	512	1808	1

Series M 133-137. Crude Petroleum—Production, Value, Foreign Trade, and Proved Reserves: 1859 to 1956

(Quantities in thousands of 42-gallon barrels and value in dollars per barrel)

Year	Production	Average value at well	Foreign trade		Estimated proved reserves, Dec. 31	Year	Production	Average value at well	Foreign trade		Estimated proved reserves, Dec. 31
			Imports	Exports					Imports	Exports	
			133	134					135	136	
1956	2,617,283	2.77	341,833	28,624	30,434,649	1930	898,011	1.19	62,129	23,705	13,600,000
1955	2,484,428	2.77	285,421	11,571	30,012,170	1929	1,007,323	1.27	78,933	26,401	13,200,000
1954	2,316,323	2.77	239,479	13,564	29,560,746	1928	901,474	1.17	79,767	18,966	11,000,000
1953	2,357,082	2.68	236,455	19,931	28,944,828	1927	901,129	1.30	58,383	15,844	10,500,000
1952	2,289,836	2.53	209,591	26,696	27,960,554	1926	770,874	1.88	60,382	15,407	8,800,000
1951	2,247,711	2.53	179,073	28,604	27,468,031						
						1925	763,743	1.68	61,824	13,337	8,500,000
1950	1,973,574	2.51	177,714	34,823	25,268,398	1924	713,940	1.43	77,775	18,239	7,500,000
1949	1,841,940	2.54	153,686	33,069	24,649,489	1923	732,407	1.34	82,015	17,534	7,600,000
1948	2,020,185	2.60	129,093	39,736	23,280,444	1922	557,531	1.61	127,308	10,805	7,600,000
1947	1,856,987	1.93	97,532	46,355	21,487,685	1921	472,183	1.73	125,364	9,627	7,800,000
1946	1,733,939	1.41	86,066	42,436	20,873,560						
						1920	442,929	3.07	106,175	9,295	7,200,000
1945	1,713,655	1.22	74,337	32,998	20,826,813	1919	378,367	2.01	52,822	6,019	6,700,000
1944	1,677,904	1.21	44,805	34,238	20,453,231	1918	355,928	1.98	37,736	4,901	6,200,000
1943	1,505,613	1.20	13,833	41,342	20,064,152	1917	335,316	1.56	30,127	4,098	5,900,000
1942	1,386,645	1.19	12,297	33,334	20,082,793	1916	300,767	1.10	30,570	4,096	5,900,000
1941	1,402,228	1.14	50,606	33,238	19,559,296						
						1915	281,104	.64	18,140	3,768	5,500,000
1940	1,353,214	1.02	42,662	51,496	19,024,515	1914	265,763	.81	17,247	2,970	5,400,000
1939	1,264,962	1.02	33,095	72,076	18,483,012	1913	248,446	.95	17,809	4,633	5,500,000
1938	1,214,355	1.13	26,412	77,254	17,343,146	1912	222,935	.74		4,493	5,400,000
1937	1,279,160	1.18	27,484	67,234	15,507,268	1911	220,449	.61		4,806	5,000,000
1936	1,099,687	1.09	32,327	50,313	13,063,400						
						1910	209,557	.61		4,288	4,500,000
1935	996,596	.97	32,239	51,430	12,400,000	1909	183,171	.70		4,056	4,200,000
1934	908,065	1.00	35,558	41,127	12,177,000	1908	178,527	.72		3,552	4,000,000
1933	905,656	.67	31,893	36,584	12,000,000	1907	166,095	.72		3,007	3,900,000
1932	785,159	.87	44,682	27,393	12,300,000	1906	126,494	.73		3,525	3,800,000
1931	851,081	.65	47,250	25,535	13,000,000	1905	134,717	.62		3,004	3,800,000

CRUDE PETROLEUM—NATURAL GAS

M 133-151

Series M 133-137. Crude Petroleum—Production, Value, Foreign Trade, and Proved Reserves: 1859 to 1956—Con.

(Quantities in thousands of 42-gallon barrels and value in dollars per barrel)

Year	Production	Average value at well	Exports	Estimated proved reserves, Dec. 31	Year	Production	Average value at well	Exports	Year	Production	Average value at well	Exports
	133	134	135	137		133	134	135		133	134	135
1904	117,081	0.86	2,647	3,600,000	1888	27,612	0.65	1,846	1878	9,894	1.83	468
1905	100,461	.94	3,012	3,400,000	1887	28,283	.67	1,920	1872	6,298	3.64	390
1906	88,767	.80	3,458	3,200,000	1886	28,065	.71	1,818	1871	5,205	4.34	269
1907	69,389	.96	3,024	3,000,000	1885	21,859	.88	1,939	1870	5,261	3.86	-----
1908	63,621	1.19	3,290	2,900,000	1884	24,218	.85	1,897	1869	4,215	5.64	-----
1899	57,071	1.18	2,802	2,500,000	1883	23,450	1.10	1,405	1868	3,646	3.62	-----
1898	55,364	.80	2,786	-----	1882	30,350	.78	1,072	1867	3,847	2.41	-----
1897	60,476	.68	2,898	-----	1881	27,661	.92	963	1866	3,598	3.74	-----
1896	60,960	.96	2,641	-----	1880	26,286	.94	875	1865	2,498	6.59	-----
1895	52,892	1.09	2,650	-----	1879	19,914	.86	681	1864	2,116	8.06	-----
1894	49,844	.72	2,908	-----	1878	15,397	1.17	578	1863	2,611	3.15	-----
1893	48,431	.60	2,660	-----	1877	13,350	2.38	685	1862	3,057	1.05	-----
1892	50,515	.51	2,486	-----	1876	9,133	2.52	608	1861	2,114	4.49	-----
1891	54,293	.56	2,308	-----	1875	8,788	1.35	394	1860	500	9.59	-----
1890	45,824	.77	2,299	-----	1874	10,927	1.17	344	1859	2	16.00	-----
1889	35,164	.77	2,028	-----								

Series M 138-151. Natural Gas—Marketed Production, Value at Well, Vented and Wasted, Repressuring, Proved Reserves, and Consumption; and Natural Gas Liquids—Production and Value: 1900 to 1956

(Natural gas—quantities in billions of cubic feet and value in cents per thousand cubic feet; natural gas liquids—quantities in millions of gallons and value in cents per gallon)

Year	Natural gas										Natural-gas liquids			
	Marketed production	Average value at well	Vented and wasted	Used for repressuring	Estimated proved reserves, Dec. 31	Consumption					Natural gasoline and cycle products		Liquefied petroleum gases	
						Residential	Commercial	Industrial			Production	Average value at plant	Production	Average value at plant
								Field	Carbon black	Other				
133	139	140	141	142	143	144	145	146	147	148	149	150	151	
1956	10,082	10.8	864	1,427	237,775	2,328	717	1,421	243	4,999	5,807	7.4	6,488	4.1
1955	9,405	10.4	774	1,541	223,697	2,124	629	1,508	245	4,565	5,845	7.3	5,978	3.3
1954	8,743	10.1	724	1,519	211,711	1,894	585	1,457	251	4,216	5,385	7.5	5,204	3.4
1953	8,397	9.2	810	1,439	211,447	1,686	581	1,471	301	3,991	5,327	7.6	4,693	4.1
1952	8,013	7.8	849	1,411	199,716	1,622	516	1,484	368	3,624	5,102	7.3	4,285	3.8
1951	7,457	7.8	793	1,439	193,812	1,475	464	1,442	426	3,295	4,972	7.4	3,628	3.8
1950	6,282	6.5	801	1,399	185,593	1,198	388	1,187	411	2,842	4,607	7.0	3,036	3.2
1949	5,420	6.3	854	1,278	180,381	993	348	1,060	428	2,368	4,167	7.3	2,431	4.1
1948	5,148	6.5	810	1,221	173,869	896	323	1,022	481	2,224	3,953	8.6	2,209	5.3
1947	4,532	6.0	1,068	1,033	165,927	802	285	934	485	1,921	3,659	6.2	1,892	3.5
1946	4,153	5.3	1,102	1,033	160,576	661	242	898	478	1,784	3,452	4.2	1,409	2.6
1945	4,042	4.9	896	1,062	147,789	607	230	917	432	1,714	3,291	4.4	1,413	-----
1944	3,815	5.1	1,010	883	133,500	562	221	855	356	1,703	3,081	4.9	1,171	-----
1943	3,516	5.2	684	825	110,000	529	205	781	316	1,573	2,773	4.4	809	-----
1942	3,146	5.1	627	753	110,000	499	184	721	336	1,306	2,726	3.8	774	-----
1941	2,894	4.9	630	644	113,800	442	145	686	365	1,167	2,689	3.9	707	-----
1940	2,734	4.5	656	363	85,000	444	135	712	369	996	2,339	2.9	-----	-----
1939	2,538	4.9	677	171	( <sup>1</sup> )	118	-----	631	347	936	2,169	4.2	-----	-----
1938	2,358	4.9	649	102	70,000	368	114	659	325	828	2,167	4.0	-----	-----
1937	2,473	5.1	526	85	66,000	372	117	651	341	921	2,055	4.7	-----	-----
1936	2,225	5.5	393	74	( <sup>1</sup> )	343	112	618	283	804	1,796	4.7	-----	-----
1935	1,969	5.8	481	-----	( <sup>1</sup> )	313	100	590	242	674	1,652	4.3	-----	-----
1934	1,816	6.0	463	-----	62,000	233	91	555	230	601	1,535	3.9	-----	-----
1933	1,597	6.2	406	-----	( <sup>1</sup> )	233	86	491	190	508	1,420	3.8	-----	-----
1932	1,594	6.4	408	-----	( <sup>1</sup> )	299	87	529	168	471	1,524	3.2	-----	-----
1931	1,722	7.0	447	-----	( <sup>1</sup> )	294	81	571	196	537	1,332	3.5	-----	-----
1930	1,979	7.6	519	-----	46,000	296	81	723	267	575	2,210	5.8	-----	-----
1929	1,952	8.2	481	-----	( <sup>1</sup> )	360	-----	705	261	591	2,234	7.1	-----	-----
1928	1,596	8.9	470	-----	( <sup>1</sup> )	321	-----	574	175	498	1,314	7.7	-----	-----
1927	1,471	8.8	434	-----	( <sup>1</sup> )	296	-----	549	144	456	1,641	7.2	-----	-----
1926	1,336	9.5	399	-----	( <sup>1</sup> )	289	-----	473	131	415	1,363	10.0	-----	-----
1925	1,210	9.4	356	-----	23,000	272	-----	424	140	352	1,127	10.7	-----	-----
1924	1,162	9.3	342	-----	-----	285	-----	393	157	306	934	8.8	-----	-----
1923	1,025	10.0	302	-----	-----	277	-----	343	109	278	816	9.5	-----	-----
1922	776	11.1	229	-----	-----	255	-----	193	54	256	506	14.4	-----	-----
1921	674	-----	193	-----	-----	248	-----	182	51	181	450	13.7	-----	-----
1920	812	-----	239	-----	-----	236	-----	202	41	269	335	13.7	-----	-----
1919	746	-----	-----	-----	-----	256	-----	170	50	270	352	13.8	-----	-----
1918	721	-----	-----	-----	-----	271	-----	-----	-----	-----	233	17.8	-----	-----
1917	795	-----	-----	-----	-----	258	-----	-----	-----	-----	218	18.4	-----	-----
1916	753	-----	-----	-----	-----	235	-----	-----	-----	-----	103	13.8	-----	-----
1915	629	-----	-----	-----	-----	217	-----	-----	-----	-----	65	7.9	-----	-----
1914	592	-----	-----	-----	-----	203	-----	-----	-----	-----	43	7.3	-----	-----
1913	532	-----	-----	-----	-----	185	-----	-----	-----	-----	24	10.2	-----	-----
1912	562	-----	-----	-----	-----	193	-----	-----	-----	-----	12	9.6	-----	-----
1911	513	-----	-----	-----	-----	175	-----	-----	-----	-----	7	7.2	-----	-----
1910	509	-----	-----	-----	-----	170	-----	-----	-----	-----	-----	-----	-----	-----
1909	481	-----	-----	-----	-----	151	-----	-----	-----	-----	-----	-----	-----	-----
1908	402	-----	-----	-----	-----	141	-----	-----	-----	-----	-----	-----	-----	-----
1907	407	-----	-----	-----	-----	132	-----	-----	-----	-----	-----	-----	-----	-----
1906	389	-----	-----	-----	-----	110	-----	-----	-----	-----	-----	-----	-----	-----
1905	320	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1904	257	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1903	239	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1902	206	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1901	180	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1900	123	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

<sup>1</sup> Not available.

## Series M 152-167. Input and Output of Petroleum Products at Refineries: 1916 to 1956

[In thousands of barrels]

Year	Input				Total	Output											
	Total	Crude petroleum		Natural-gas liquids		Total	Gasoline <sup>1</sup>	Kerosene	Distillate	Residual	Lubricating oil	Wax	Coke	Asphalt	Still gas	Road oil	Other finished products
		Domes-tic	Foreign														
	152	153	154	155		156	157	158	159	160	161	162	163	164	165	166	167
1956	3,040,168	2,563,655	341,451	135,062	3,059,880	1,896,787	123,480	665,687	426,699	59,211	5,367	31,095	90,636	121,993	8,027	130,898	
1955	2,856,600	2,446,833	283,885	126,882	2,880,187	1,831,528	117,137	602,547	420,331	55,836	5,293	28,337	83,121	116,506	8,482	111,069	
1954	2,657,113	2,300,766	238,798	117,549	2,673,555	1,232,989	122,305	542,278	416,757	53,243	5,290	24,284	74,912	102,552	7,213	91,732	
1953	2,666,158	2,321,820	233,045	111,298	2,678,764	1,233,954	123,200	528,111	449,979	52,545	4,978	21,607	72,409	102,243	6,594	78,144	
1952	2,545,157	2,235,198	206,061	103,898	2,551,845	1,141,467	128,767	517,920	453,897	55,600	4,331	18,123	70,312	95,275	6,998	59,155	
1951	2,469,654	2,188,677	181,727	99,250	2,484,022	1,108,880	135,742	475,801	469,377	61,489	4,814	18,977	66,302	96,294	6,100	40,246	
1950	2,189,506	1,918,854	176,013	94,639	2,196,866	998,093	118,512	398,912	425,217	51,735	4,462	17,224	58,240	83,743	6,928	33,800	
1949	2,029,678	1,789,756	154,465	85,457	2,039,517	939,051	102,152	340,825	424,909	45,389	3,208	16,959	49,007	82,621	7,691	27,705	
1948	2,124,567	1,924,335	124,014	76,218	2,118,252	895,986	121,914	379,340	479,988	51,416	3,515	14,494	51,919	81,159	7,916	30,605	
1947	1,922,938	1,754,987	97,259	70,692	1,918,959	814,841	110,412	312,173	447,795	51,765	3,624	12,077	49,286	85,564	7,074	24,348	
1946	1,793,058	1,645,845	84,352	62,861	1,793,086	748,411	104,385	287,896	431,364	45,645	3,003	10,621	44,911	88,136	6,175	22,539	
1945	1,789,858	1,645,862	73,672	70,324	1,793,523	774,460	81,024	249,224	469,492	41,867	2,921	10,115	39,196	103,458	2,686	19,080	
1944	1,732,891	1,622,514	43,170	67,207	1,715,385	722,718	78,344	239,152	461,455	41,106	2,833	9,017	38,479	102,239	1,556	18,436	
1943	1,490,936	1,417,559	12,179	61,198	1,477,707	592,425	72,270	211,516	417,306	38,679	2,697	6,942	37,162	86,755	2,295	9,660	
1942	1,390,698	1,319,507	14,596	56,595	1,387,911	586,971	67,474	196,714	358,901	38,626	2,502	6,692	34,631	78,924	8,089	8,117	
1941	1,457,017	1,355,246	50,946	47,825	1,460,252	671,110	72,586	189,177	342,367	39,539	2,393	8,244	36,067	83,354	9,149	6,266	
1940	1,333,709	1,252,864	41,798	39,547	1,333,342	597,375	73,882	183,304	316,221	36,765	1,833	7,633	29,406	75,950	7,771	3,202	
1939	1,277,446	1,204,350	33,490	39,606	1,233,938	596,501	68,521	161,746	305,944	35,036	1,659	8,332	27,248	68,779	7,868	2,359	
1938	1,204,976	1,138,323	25,187	39,961	1,206,880	556,012	64,580	151,774	294,890	30,826	1,555	8,011	23,878	65,890	7,543	1,921	
1937	1,222,821	1,157,444	25,996	39,381	1,224,624	559,141	65,308	146,706	312,064	35,321	1,863	6,533	23,001	64,218	8,087	2,382	
1936	1,102,387	1,034,637	33,933	33,817	1,102,144	504,811	56,082	125,906	287,968	30,927	1,689	6,891	21,278	57,046	7,398	2,148	
1935	996,815	933,659	32,131	31,025	986,702	457,842	55,813	100,235	259,826	27,853	1,608	7,290	17,133	51,184	6,030	1,888	
1934	923,798	860,776	34,860	28,162	908,883	416,932	53,855	94,972	240,381	26,373	1,674	6,500	15,623	44,391	6,310	1,872	
1933	886,600	825,786	35,468	25,346	865,297	401,591	48,977	78,920	237,519	23,775	1,677	7,900	12,757	45,212	5,534	1,435	
1932	846,329	777,696	42,301	26,332	827,538	392,623	43,836	69,467	225,283	22,433	1,639	9,123	13,612	40,905	6,879	1,738	
1931	929,724	847,671	46,937	35,116	914,023	431,510	42,446	83,882	253,085	26,704	1,705	10,363	16,371	38,630	5,177	4,150	
1930	970,617	866,615	60,832	43,170	931,372	432,241	49,208	81,551	290,947	34,201	1,956	9,895	18,194	-----	5,425	7,754	
1929	1,034,165	912,191	75,517	46,457	1,013,070	435,078	55,940	448,949	-----	34,359	2,261	7,390	19,169	-----	9,924	-----	
1928	948,518	835,711	77,584	35,223	935,448	376,945	59,353	427,237	-----	34,658	2,257	7,344	18,252	-----	9,402	-----	
1927	860,997	778,729	50,106	32,162	845,480	330,435	56,113	393,066	-----	31,721	2,089	5,858	18,793	-----	7,405	-----	
1926	806,960	734,301	44,963	27,696	791,100	299,734	61,768	365,195	-----	32,293	2,310	5,316	16,454	-----	8,030	-----	
1925	759,556	698,582	41,338	19,636	745,863	259,601	59,689	364,991	-----	31,055	2,135	5,281	15,067	-----	8,044	-----	
1924	656,390	597,954	45,765	12,671	649,720	213,326	60,026	320,476	-----	27,498	1,861	4,085	14,196	-----	8,252	-----	
1923	586,725	538,252	42,986	5,487	572,814	179,903	55,927	287,481	-----	26,128	1,684	3,717	12,888	-----	5,086	-----	
1922	504,368	425,823	74,883	3,662	-----	147,672	54,913	254,910	-----	23,304	-----	-----	-----	-----	-----	-----	
1921	445,880	368,037	75,326	2,517	-----	122,704	46,313	230,091	-----	20,896	-----	-----	-----	-----	-----	-----	
1920	437,068	372,779	61,136	3,153	-----	116,251	55,240	210,987	-----	24,938	-----	-----	-----	-----	-----	-----	
1919	364,477	327,533	33,987	2,957	-----	94,235	55,753	181,602	-----	20,161	-----	-----	-----	-----	-----	-----	
1918	328,476	324,618	1,407	2,451	-----	85,007	43,461	174,319	-----	20,035	-----	-----	-----	-----	-----	-----	
1917	-----	315,132	-----	-----	-----	67,870	41,114	155,079	-----	17,947	-----	-----	-----	-----	-----	-----	
1916	-----	246,992	-----	-----	-----	49,021	34,655	111,045	-----	14,870	-----	-----	-----	-----	-----	-----	

<sup>1</sup> Includes unfinished gasoline production beginning 1952.

PETROLEUM PRODUCTS

M 168-177

Series M 168-177. Petroleum Products—Imports and Exports: 1920 to 1956

[In thousands of barrels]

Year	Imports			Exports						
	Total <sup>1</sup>	Distillate <sup>2</sup>	Residual	Total <sup>1</sup>	Gasoline	Kerosene	Distillate	Residual	Lubricants	Petroleum wax
	168	169	170	171	172	173	174	175	176	177
1956	183,768	5,159	162,869	128,762	35,572	3,297	34,585	27,877	13,859	920
1955	170,143	4,418	152,035	122,617	34,521	3,335	24,605	33,799	14,298	1,248
1954	144,476	3,195	129,124	116,184	34,866	4,852	24,223	26,753	15,075	1,342
1953	141,044	3,379	131,533	126,660	37,925	7,265	32,328	25,991	12,999	1,126
1952	138,916	2,742	128,479	131,492	36,235	7,821	33,515	27,701	16,031	1,036
1951	129,121	1,767	119,166	125,448	40,136	6,843	22,555	28,999	17,429	1,349
1950	132,547	2,602	120,036	76,433	24,721	2,078	12,563	16,228	14,252	1,193
1949	81,873	1,825	75,175	86,307	39,847	2,533	12,295	12,641	12,612	1,081
1948	59,051	2,546	53,269	94,938	37,302	3,495	21,293	13,011	13,392	994
1947	61,857	4,175	54,244	118,122	47,449	7,252	29,877	10,623	14,371	1,107
1946	51,610	5,204	44,647	110,637	45,334	8,637	29,487	9,133	11,051	718
1945	39,232	4,754	31,648	149,985	38,059	6,180	33,496	11,669	6,575	566
1944	47,506	7,022	36,485	173,378	100,539	4,838	43,491	12,536	8,709	579
1943	49,579	15,269	27,210	108,615	51,577	4,752	24,957	14,394	8,863	617
1942	23,669	3,636	18,432	83,073	35,097	2,576	21,575	12,095	8,272	543
1941	46,536	5,074	37,369	75,592	27,033	3,221	16,925	14,114	9,924	761
1940	41,039	3,333	29,366	78,970	25,377	3,374	19,140	16,109	10,461	673
1939	25,965		15,630	116,833	44,633	8,241	32,020	17,435	11,331	831
1938	27,396		21,065	116,474	50,109	7,504	29,641	17,920	9,417	719
1937	29,673	17	22,114	102,077	34,732	8,385	30,129	15,304	10,975	829
1936	24,777	182	13,801	79,133	26,093	6,336	20,443	14,435	8,691	669
1935	20,396	15	16,115	74,343	27,399	6,651	16,249	12,699	8,499	821
1934	14,936	12,634		71,737	23,043	9,731	14,506	14,099	7,660	711
1933	13,501	13,215		67,572	26,750	8,959	11,424	9,139	8,213	835
1932	29,312	21,236		74,263	33,319	11,044	8,732	11,212	6,351	840
1931	33,337	24,993		93,359	45,716	12,712	29,231		8,123	1,033
1930	43,439	26,030		132,794	65,575	16,334	36,450		9,935	1,046
1929	29,777	20,545		136,719	62,059	20,022	39,151		10,360	1,140
1928	11,732	7,263		135,991	53,412	22,034	44,427		11,023	1,403
1927	13,353	3,124		125,305	44,951	19,537	47,391		9,776	1,216
1926	20,933	14,432		116,543	43,769	22,243	33,351		9,435	1,199
1925	16,376	12,245		100,497	31,634	21,212	36,033		9,673	1,133
1924	16,306	12,927		93,905	29,151	21,961	37,249		9,103	1,367
1923	17,633	12,236		84,447	21,034	20,347	33,372		8,372	1,173
1922	3,665	<sup>3</sup> 2,947		63,539	14,362	21,439	13,479		7,941	1,016
1921	3,423	( <sup>4</sup> )		62,025	13,363	13,016	22,676		6,936	807
1920	2,647	( <sup>4</sup> )		70,231	15,673	20,357	22,030		9,643	1,340

<sup>1</sup> Includes other entries not shown separately.

<sup>2</sup> Beginning 1952, excludes all distillate used as jet component.

<sup>3</sup> October through December only.

<sup>4</sup> Not available.

Series M 178-194. Nonmetals: 1818 to 1956

Year or period	Cement			Lime		Sand and gravel, sold or used	Stone, sold or used by producers	Sulfur			Pyrites		Potash		Phosphate rock		
	Shipments	Average value of port-land cement	Crude gypsum mined	Sold by producers	Average value per short ton			Production from French mines	Crude imports	Crude exports	Production	Imports	Salt, sold or used by producers	Sold by producers	Imports	Sold or used by producers	Exports
						178	179										
	1,000 bbl.	Dol. per bbl.	1,000 short tons	1,000 short tons	Dol.	1,000 short tons	1,000 short tons	1,000 long tons	1,000 long tons	1,000 long tons	1,000 long tons	1,000 long tons	1,000 short tons	1,000 short tons	1,000 long tons	1,000 long tons	
1956	325,650	3.05	10,316	10,577	12.83	624,860	506,231	6,424	15	1,651	1,070	178	24,216	2,108	181	15,747	2,880
1955	310,245	2.86	10,684	10,480	12.18	592,158	470,491	5,739	24	1,601	1,067	180	22,704	2,006	178	12,265	2,268
1954	278,385	2.76	8,996	8,629	11.79	556,587	412,060	5,516	(*)	1,645	909	147	20,669	1,918	119	18,821	2,385
1953	264,338	2.67	8,293	8,674	11.59	440,399	306,842	5,155	1	1,242	923	190	20,789	1,732	184	12,504	2,101
1952	254,816	2.54	8,415	8,073	11.80	485,622	301,586	5,298	5	1,304	994	296	19,545	1,595	188	12,065	1,426
1951	244,629	2.54	8,668	8,256	11.74	400,634	285,542	5,278	2	1,288	1,018	221	20,207	1,408	814	10,776	1,727
1950	231,975	2.35	8,198	7,478	11.13	370,455	252,106	5,192	-----	1,441	981	209	16,630	1,276	201	11,114	1,832
1949	209,314	2.30	6,608	6,318	10.97	319,104	224,027	4,745	(*)	1,431	888	121	15,572	1,121	19	8,987	1,268
1948	207,680	2.18	7,255	7,264	10.85	319,266	225,585	4,869	-----	1,263	929	107	16,408	1,143	27	8,669	1,141
1947	190,420	1.90	6,208	6,779	9.42	287,659	207,555	4,441	-----	1,299	941	127	16,054	1,053	26	9,027	1,648
1946	172,101	1.72	5,629	5,998	8.52	254,131	178,852	3,860	-----	1,189	813	183	15,182	923	4	6,861	633
1945	107,833	1.63	3,812	5,921	7.76	195,524	158,405	3,758	-----	919	723	187	15,394	870	6	5,807	491
1944	95,592	1.59	3,761	6,474	7.52	194,783	155,580	3,218	-----	654	789	181	15,717	818	5	5,377	439
1943	129,479	1.57	3,878	6,597	7.44	234,064	171,348	2,539	-----	657	802	256	15,214	732	17	5,126	358
1942	187,809	1.53	4,698	6,104	7.27	304,346	195,884	3,461	-----	568	720	300	13,693	681	4	4,644	529
1941	170,365	1.47	4,789	6,079	7.06	238,715	188,108	3,139	-----	729	645	369	12,721	581	16	4,690	1,020
1940	182,864	1.46	3,699	4,887	6.95	238,308	153,723	2,732	-----	746	627	407	10,360	393	119	4,008	751
1939	125,057	1.47	3,227	4,254	7.06	226,008	147,447	2,091	(*)	628	519	482	9,278	366	100	3,757	949
1938	108,192	1.45	2,684	3,847	7.21	181,320	124,839	2,393	(*)	579	556	384	8,026	288	194	3,739	1,141
1937	115,678	1.48	3,058	4,124	7.30	189,660	133,143	2,742	(*)	675	584	524	9,242	267	351	3,956	1,053
1936	114,611	1.51	2,713	3,749	7.18	178,830	131,416	2,016	1	547	547	429	8,829	223	212	3,352	1,209
1935	76,244	1.51	1,904	2,987	7.28	123,924	83,159	1,633	2	402	514	397	7,927	225	242	3,042	1,104
1934	76,579	1.54	1,536	2,397	7.16	116,612	92,064	1,421	1	507	433	366	7,612	114	172	2,835	938
1933	84,761	1.33	1,335	2,269	6.23	107,755	70,222	1,406	6	523	284	374	7,605	189	172	2,490	829
1932	81,383	1.01	1,416	1,960	6.23	120,038	70,644	890	-----	353	190	253	6,408	56	114	1,707	613
1931	123,377	1.11	2,559	2,708	6.90	153,479	97,933	2,129	-----	408	331	352	7,358	64	215	2,535	951
1930	160,846	1.44	3,471	3,383	7.56	197,052	126,996	2,559	(*)	593	348	355	8,054	57	342	3,926	1,226
1929	172,027	1.48	5,016	4,270	7.84	222,572	141,110	2,362	1	855	333	514	8,544	58	325	3,761	1,143
1928	178,052	1.57	5,102	4,458	8.18	209,119	133,870	1,982	5	685	313	457	8,075	60	330	3,501	899
1927	174,023	1.62	5,347	4,415	8.75	197,454	136,345	2,112	3	789	303	251	7,569	50	244	3,171	918
1926	164,219	1.71	5,635	4,560	9.11	183,101	124,496	1,890	(*)	577	227	366	7,372	25	266	3,210	749
1925	159,047	1.77	5,678	4,581	9.30	172,001	115,851	1,409	(*)	629	194	276	7,393	26	258	3,432	870
1924	147,466	1.81	5,043	4,072	9.72	156,230	103,184	1,221	1	482	163	247	6,803	22	200	2,868	819
1923	137,184	1.90	4,758	4,076	9.81	139,932	103,319	2,036	(*)	473	191	264	7,131	19	210	3,007	823
1922	118,591	1.76	3,780	3,640	9.14	94,867	80,212	1,831	(*)	486	173	279	6,793	11	201	2,418	719
1921	96,047	1.89	2,391	2,532	9.83	79,845	63,539	1,879	(*)	286	173	216	4,981	4	79	2,064	733
1920	97,079	2.02	3,129	3,570	10.52	82,041	78,527	1,255	(*)	477	311	333	6,840	41	225	4,104	1,070
1919	86,141	1.71	2,420	3,330	8.84	70,576	65,539	1,191	(*)	225	421	389	6,853	46	40	2,272	879
1918	71,348	1.60	2,057	3,206	8.86	61,324	68,533	1,354	(*)	131	464	497	7,239	39	8	2,491	143
1917	91,343	1.35	2,696	3,786	6.29	76,419	89,575	1,184	1	153	483	967	6,978	33	8	2,584	166
1916	95,394	1.10	2,758	4,078	4.54	89,092	91,831	650	21	129	439	1,245	6,363	10	8	1,932	244
1915	87,685	.86	2,448	3,623	3.98	76,603	-----	521	25	37	394	965	5,352	1	49	1,836	253
1914	87,258	.93	2,476	3,331	3.92	79,232	-----	413	24	98	337	1,027	4,873	-----	207	2,794	964
1913	89,541	1.00	2,600	3,595	4.07	79,556	-----	491	15	89	341	851	4,816	-----	272	3,111	1,367
1912	85,926	.81	2,501	3,529	3.96	68,356	-----	788	27	58	351	971	4,665	-----	254	2,973	1,207
1911	79,543	.84	2,324	3,393	4.03	66,847	-----	205	24	23	301	1,006	4,366	-----	274	3,053	1,247
1910	77,785	.89	2,379	3,506	4.02	69,410	-----	247	29	31	242	804	4,243	-----	230	2,655	1,033
1909	66,690	.81	2,253	3,485	3.98	59,566	-----	274	29	37	247	689	4,215	-----	173	2,333	1,021
1908	52,911	.85	1,722	2,767	4.01	37,216	-----	364	20	23	223	668	4,035	-----	136	2,336	1,133
1907	52,230	1.11	1,752	3,093	4.09	41,852	-----	189	20	36	247	623	4,159	-----	144	2,265	1,018
1906	51,000	1.13	1,541	3,193	3.90	32,932	-----	295	72	14	261	593	3,944	-----	156	2,081	-----
1905	40,102	.94	1,043	2,984	3.67	23,205	-----	220	63	12	253	512	3,635	-----	129	1,947	-----
1904	31,675	.83	941	2,708	3.63	10,630	-----	85	123	3	423	423	3,034	-----	-----	1,374	-----
1903	29,399	1.24	1,042	(*)	(*)	2,111	-----	47	189	-----	226	420	2,656	-----	-----	1,532	-----
1902	25,754	1.21	816	(*)	(*)	1,843	-----	47	171	-----	200	440	3,339	-----	-----	1,430	-----
1901	20,069	.99	634	(*)	(*)	-----	-----	47	174	-----	235	404	2,879	-----	-----	1,484	-----
1900	17,231	1.09	594	(*)	(*)	-----	-----	3	167	-----	205	322	2,922	-----	-----	1,491	-----
1899	15,355	1.43	436	(*)	(*)	-----	-----	4	140	-----	175	270	2,759	-----	-----	1,516	-----
1898	12,344	1.62	292	(*)	(*)	-----	-----	1	151	-----	193	253	2,466	-----	-----	1,309	-----
1897	11,033	1.61	289	(*)	(*)	-----	-----	2	137	-----	143	260	2,236	-----	-----	1,039	-----
1896	9,526	1.57	224	(*)	(*)	-----	-----	5	138	-----	115	200	1,939	-----	-----	931	-----
1895	8,731	1.60	266	(*)	(*)	-----	-----	2	121	-----	100	190	1,914	-----	-----	1,039	-----
1894	8,362	1.73	239	(*)	(*)	-----	-----	(*)	125	-----	106	164	1,816	-----	-----	997	-----
1893	8,002	1.96	254	(*)	(*)	-----	-----	1	108	-----	76	195	1,666	-----	-----	941	-----
1892	8,759	2.11	256	(*)	(*)	-----	-----	2	101	-----	110	152	1,638	-----	-----	632	-----
1891	8,223	2.13	203	(*)	(*)	-----	-----	1	117	-----	107	101	1,393	-----	-----	583	-----
1890	7,777	2.09	133	(*)	(*)	-----	-----	(*)	163	-----	100	(*)	1,243	-----	-----	510	-----
1889	6,332	1.67	268	(*)	(*)	-----	-----	(*)	136	-----	94	(*)	1,121	-----	-----	546	-----
1888	6,503	-----	110	4,909	5.00	-----	-----	(*)	97	-----	54	(*)	1,123	-----	-----	452	-----
1887	6,343	-----	95	4,675	5.00	-----	-----	3	98	-----	52	17	1,121	-----	-----	481	-----
1886	4,500	1.95	95	4,250	5.00	-----	-----	2	118	-----	55	2	1,079	-----	-----	431	-----

## Series M 195-210. Iron Ore and Pig Iron: 1799 to 1956

[Physical quantities for iron ore in thousands of long tons; for pig iron in thousands of short tons]

Year	Iron ore										Pig iron					
	Production	Shipments			Price, Mesabi, non-Bessemer, per long ton	Foreign trade		Production by mining method		Employment			Shipments	Average price per long ton <sup>1</sup>	Imports	Exports
		Quantity		Average value per long ton		Imports	Exports	Underground	Open pit	Average workers on active days	Average days	Average hours per shift				
		Total	Beneficiated													
195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	
1956	97,849	97,897	88,232	\$7.73	\$10.85	80,411	5,508	26,373	119,724	26,817	234	8.0	75,110	\$60.69	327	269
1955	102,999	106,254	86,178	7.12	10.10	23,472	4,517	27,623	114,706	23,311	246	8.0	77,301	57.20	284	35
1954	78,129	76,954	27,756	6.99	9.90	15,792	3,146	24,222	85,065	27,840	220	8.0	57,788	56.00	291	10
1953	117,995	117,822	85,896	6.76	9.90	11,074	4,252	32,373	124,240	30,762	271	8.0	74,168	55.25	590	19
1952	97,918	97,973	27,024	6.09	8.30	9,761	5,123	28,181	100,209	31,800	248	8.0	61,235	58.08	380	14
1951	116,505	116,230	80,665	5.46	8.30	10,140	4,329	31,952	120,162	34,332	278	8.0	70,250	52.00	1,067	7
1950	98,045	97,764	26,718	4.99	7.70	8,281	2,551	28,872	96,868	31,087	264	8.0	64,626	47.04	805	7
1949	84,987	84,687	20,658	4.50	7.20	7,391	2,425	26,688	78,162	31,498	245	8.0	52,919	46.00	100	81
1948	101,008	100,822	23,629	3.91	6.20	6,092	3,081	27,229	98,996	30,375	285	8.0	60,051	41.60	219	7
1947	93,092	93,315	21,408	3.44	5.55	4,896	2,811	28,348	85,625	29,821	270	8.0	58,368	33.82	33	11
1946	70,843	70,090	15,589	3.07	4.55	2,754	1,506	20,335	68,859	28,009	222	8.1	45,076	27.18	14	96
1945	88,376	88,137	19,587	2.77	4.55	1,198	2,063	27,377	78,935	26,777	282	8.0	58,265	24.52	21	91
1944	94,118	95,136	20,303	2.70	4.45	464	2,158	28,626	82,394	29,244	280	8.0	60,996	23.50	6	162
1943	101,248	99,463	20,118	2.70	4.45	399	2,425	32,825	86,850	33,280	287	8.0	60,787	23.50	1	144
1942	105,526	105,989	23,105	2.63	4.45	731	2,515	33,633	92,894	32,774	279	8.2	59,101	23.50	1	111
1941	92,410	92,816	19,376	2.68	4.45	2,344	1,908	27,217	85,192	28,587	264	8.0	55,224	23.50	4	579
1940	73,696	75,198	12,926	2.51	4.45	2,479	1,386	24,105	49,591	25,128	241	8.0	46,959	22.50	11	620
1939	51,732	54,827	9,426	2.89	4.95	2,413	1,057	18,980	32,752	21,859	222	8.0	35,942	21.10	43	193
1938	28,447	26,431	4,886	2.81	4.95	2,122	592	13,742	14,705	19,788	193	8.0	20,387	21.71	34	485
1937	72,094	72,348	12,350	2.87	4.95	2,442	1,264	23,461	48,632	25,945	247	8.0	39,451	22.99	125	876
1936	48,789	51,466	9,659	2.56	4.50	2,232	645	17,986	30,303	20,306	227	8.1	34,495	19.10	186	6
1935	30,540	33,426	6,067	2.48	4.50	1,492	661	12,613	17,927	14,987	219	8.0	23,720	18.17	147	5
1934	24,588	25,793	4,146	2.58	4.50	1,428	609	10,533	14,054	16,513	193	8.0	17,501	17.70	123	5
1933	17,553	24,624	3,556	2.59	4.50	861	155	6,217	11,336	15,125	140	8.5	16,076	15.44	178	3
1932	9,847	5,331	407	2.42	4.50	582	83	6,433	3,413	12,649	145	9.0	9,541	14.25	146	3
1931	31,132	28,516	4,676	2.60	4.50	1,466	436	17,279	18,330	22,867	201	8.9	19,950	15.88	95	8
1930	58,409	55,201	8,974	2.64	4.50	2,775	752	29,417	28,976	30,975	259	8.9	33,544	17.99	154	15
1929	73,028	75,603	9,424	2.61	4.50	3,139	1,304	32,374	40,654	30,768	281	8.9	46,535	18.20	165	52
1928	62,197	63,433	8,621	2.46	4.25	2,453	1,282	29,178	33,019	30,238	265	8.9	42,900	16.56	158	95
1927	61,741	61,232	8,115	2.47	4.25	2,621	899	30,891	30,850	34,755	264	8.9	39,051	17.71	148	57
1926	67,623	69,293	8,372	2.51	4.25	2,555	869	33,071	34,552	34,399	273	9.0	42,768	18.55	499	23
1925	61,908	63,925	8,736	2.52	4.25	2,191	631	31,937	29,971	35,757	270	8.9	41,232	19.59	494	37
1924	54,267	52,083	7,093	2.91	4.75	2,047	595	28,680	25,587	38,765	263	9.0	34,792	20.23	234	46
1923	69,351	69,811	10,687	3.45	5.55	2,768	1,117	30,228	39,123	41,294	286	9.1	42,965	25.71	412	36
1922	47,129	50,613	6,623	3.12	5.05	1,135	602	22,428	24,701	35,758	250	8.9	30,991	23.98	429	35
1921	29,491	26,653	3,728	3.37	5.55	316	440	15,645	18,846	32,348	209	9.1	17,963	21.87	-----	-----
1920	67,604	69,281	8,515	4.11	6.55	1,273	1,145	34,940	32,664	50,590	287	9.2	39,995	42.05	-----	-----
1919	60,965	56,373	7,356	3.50	5.55	476	997	32,751	28,214	51,780	280	9.1	33,585	27.49	-----	-----
1918	69,658	72,021	7,882	3.39	5.05	787	1,256	33,951	35,708	55,674	293	9.1	42,618	32.50	-----	-----
1917	75,289	75,573	8,167	3.15	5.05	972	1,132	39,839	35,450	60,594	280	9.1	43,246	39.10	-----	-----
1916	75,168	77,871	8,105	2.84	3.55	1,326	1,184	40,303	34,865	57,049	274	9.0	43,821	19.87	-----	-----
1915	55,526	55,493	5,581	1.88	2.80	1,341	708	33,365	22,161	43,385	272	8.9	34,031	13.78	-----	-----
1914	41,440	39,714	4,130	1.81	2.85	1,351	552	-----	-----	-----	-----	-----	24,935	12.89	-----	-----
1913	61,980	-----	-----	2.19	3.40	2,595	1,042	-----	-----	-----	-----	-----	34,036	14.77	-----	-----
1912	55,150	-----	-----	1.88	2.85	2,105	1,196	-----	-----	-----	-----	-----	33,803	13.90	-----	-----
1911	43,877	-----	-----	2.11	3.50	1,812	763	-----	-----	-----	-----	-----	26,048	13.10	-----	-----
1910	57,015	-----	-----	2.47	4.00	2,591	749	-----	-----	-----	-----	-----	29,875	14.73	-----	-----
1909	51,294	-----	-----	2.15	3.50	1,695	456	27,567	24,150	-----	-----	-----	28,891	15.52	-----	-----
1908	35,983	-----	-----	2.27	3.50	777	309	-----	-----	-----	-----	-----	17,843	15.21	-----	-----
1907	51,721	-----	-----	2.55	4.00	1,229	279	-----	-----	-----	-----	-----	28,875	23.89	-----	-----
1906	47,750	-----	-----	2.11	3.50	1,060	265	-----	-----	-----	-----	-----	28,344	20.98	-----	-----
1905	42,400	-----	-----	1.77	3.00	846	208	-----	-----	-----	-----	-----	25,751	17.88	-----	-----
1904	27,500	-----	-----	1.56	2.35	488	214	-----	-----	-----	-----	-----	18,477	15.57	-----	-----
1903	34,800	-----	-----	1.89	3.20	980	81	-----	-----	-----	-----	-----	20,170	19.92	-----	-----
1902	35,300	-----	-----	1.84	2.60	1,165	88	-----	-----	44,800	260	-----	19,960	22.19	-----	-----
1901	28,600	-----	-----	1.71	2.35	967	65	-----	-----	-----	-----	-----	17,784	15.87	-----	-----
1900	27,300	-----	-----	2.42	4.00	898	51	-----	-----	-----	-----	-----	15,444	19.98	-----	-----
1899	24,600	-----	-----	1.42	1.90	674	41	-----	-----	-----	-----	-----	15,255	19.36	-----	-----
1898	19,434	-----	-----	1.14	1.70	187	-----	-----	-----	-----	-----	-----	13,187	11.66	-----	-----
1897	17,518	-----	-----	1.08	1.80	490	-----	-----	-----	-----	-----	-----	10,811	12.10	-----	-----
1896	16,005	-----	-----	1.42	2.40	683	-----	-----	-----	-----	-----	-----	9,658	12.95	-----	-----
1895	15,958	-----	-----	1.14	1.90	524	-----	-----	-----	-----	-----	-----	10,580	13.10	-----	-----
1894	11,880	-----	-----	1.14	1.75	167	-----	-----	-----	-----	-----	-----	7,456	12.66	-----	-----
1893	11,588	-----	-----	1.66	-----	527	-----	-----	-----	-----	-----	-----	7,979	14.52	-----	-----
1892	16,297	-----	-----	2.04	-----	807	-----	-----	-----	-----	-----	-----	10,256	15.75	-----	-----
1891	14,591	-----	-----	-----	-----	913	-----	-----	-----	-----	-----	-----	9,273	17.52	-----	-----
1890	16,086	-----	-----	-----	-----	1,247	-----	-----	-----	-----	-----	-----	10,307	18.40	-----	-----
1889	14,518	-----	-----	2.80	-----	854	-----	-----	-----	36,341	248	-----	8,516	17.75	-----	-----

<sup>1</sup> 1908-1956, basic f.o.b. Valley furnaces; 1844-1907, No. 1 Foundry, Philadelphia; 1799-1843, charcoal pig iron. See text for minor variations within the periods.

Series M 195-210. Iron Ore and Pig Iron: 1799 to 1956—Con.

[Physical quantities for iron ore in thousands of long tons; for pig iron in thousands of short tons]

Year	Iron ore				Pig iron		Year	Iron ore			Year	Pig iron		Year	Pig iron	
	Production	Imports	Employment		Shipments	Average price per long ton <sup>1</sup>		Production	Shipments	Average price per long ton <sup>1</sup>		Shipments	Average price per long ton <sup>1</sup>		Shipments	Average price per long ton <sup>1</sup>
			Average workers on active days	Average number of days												
195	200	204	205	207	208	195	207	208	207	208	207	208				
1888	12,068	587			7,269	\$18.88	1885		932	\$46.12	1842	241	\$28.00	1820	22	\$35.00
1887	11,300	1,194			7,187	20.92	1864		1,136	59.25	1841	(*)	28.50	1819	(*)	36.50
1886	10,000	1,089			6,365	18.71	1863		948	35.25		(*)		1818	(*)	42.25
1885	7,600	391			4,580	18.00	1862		758	23.87	1840	321	32.75	1817	(*)	47.00
1884	8,200	488			4,590	19.87	1861		732	20.25	1839	(*)	30.00	1816	(*)	50.25
1883	8,400	491			5,147	22.37	1860	2,873	920	22.75	1838	(*)	32.25			
1882	9,000	590			5,178	25.75	1859		841	23.37	1837	(*)	41.25	1815	(*)	53.75
1881	7,120	783			4,642	25.12	1858		705	22.25	1836	(*)	41.50	1814	(*)	46.00
1880	7,120	493	35,000	231	4,295	28.50	1857		798	26.37	1835	(*)	30.25	1813	(*)	47.50
1879		284			3,071	21.50	1856		883	27.12	1834	(*)	30.25	1812	(*)	47.25
1878		28			2,577	17.62	1855		784	27.75	1833	(*)	38.25	1811	(*)	44.00
1877		31			2,315	18.87	1854		736	36.87	1832	224	35.00	1810	60	38.00
1876		17			2,093	22.25	1853		(*)	36.12	1831	214	35.00	1809	(*)	40.00
1875	4,018	57			2,267	25.50	1852		560	22.62	1830	185	35.00	1808	(*)	40.00
1874		58			2,689	30.25	1851		(*)	21.37	1829	159	35.00	1807	(*)	38.75
1873		46			2,868	42.75	1850		631	20.87	1828	146	35.00	1806	(*)	35.75
1872		24			2,856	48.87	1849		728	22.75	1827	(*)	39.25	1805	(*)	30.75
1871					1,912	35.12	1848		896	26.50	1826	(*)	46.50	1804	(*)	29.75
1870	3,882				1,865	33.25	1847		896	30.25	1825	(*)	46.75	1803	(*)	29.25
1869					1,917	40.62	1846		857	27.87	1824	(*)	40.00	1802	(*)	30.75
1868					1,608	39.25	1845		(*)	29.25	1823	(*)	35.25	1801	(*)	32.75
1867					1,462	44.12	1844		(*)	25.75	1822	(*)	35.00	1800	(*)	35.75
1866					1,350	46.87	1843		(*)	26.75	1821	(*)	35.00	1799	(*)	36.25

<sup>1</sup>1908-1956, basic f.o.b. Valley furnaces; 1844-1907, No. 1 Foundry, Philadelphia; 1799-1843, charcoal pig iron. See text for minor variations within the periods. <sup>2</sup> Not available.

FERROALLOYING METALS

M 211-224

Series M 211-224. Ferroalloying Metals—Manganese, Chromite, Tungsten, Molybdenum, Vanadium, and Nickel: 1868 to 1956

[Quantities in short tons and metallic content, except where specified as gross weight]

Year	Manganese ore (35% or more Mn) (gross weight)		Chromite (gross weight)		Tungsten concentrates		Molybdenum ores and concentrates		Vanadium ores and concentrates (1,000 pounds)		Nickel			
	Domestic output	Imports	Domestic output <sup>1</sup>	Imports	Domestic output	Imports <sup>2</sup>	Domestic output	Exports	Domestic output	Imports <sup>3</sup>	Production, secondary		Imports	Price, electrolytic (cents per pound)
											Total	From old scrap		
	211	212	213	214	215	216	217	218	219	220	221	222	223	224
1956	344,735	2,222,460	207,662	2,175,056	7,014	10,430	28,563	8,991	11,271	-----	14,860	8,516	142,642	64.5-74
1955	287,255	2,263,847	153,253	1,833,999	7,810	10,350	32,355	7,290	9,965	185	11,540	7,520	142,117	64.5
1954	206,128	2,243,601	163,365	1,471,037	6,515	12,094	32,010	6,773	9,860	395	8,605	4,610	131,784	60.0-64.5
1953	157,536	3,115,023	58,817	2,226,631	4,564	14,030	26,912	3,519	9,286	717	8,352	5,236	118,737	56.5-60.0
1952	115,379	2,203,545	21,304	1,708,969	3,622	8,708	21,358	3,086	7,177	1,044	7,479	4,259	108,850	56.5
1951	105,007	1,902,859	7,056	1,429,020	2,986	3,188	18,978	1,865	6,080	983	8,602	4,814	93,190	50.5-56.5
1950	134,451	1,925,148	404	1,303,713	2,294	8,074	22,272	3,117	4,596	1,457	8,795	4,781	91,347	40.0-50.5
1949	126,135	1,423,903	433	1,203,852	1,316	3,137	11,640	2,660	3,161	551	5,680	1,914	91,073	40.0
1948	131,100	1,473,453	3,619	1,542,125	1,919	3,774	14,834	2,066	1,789	1,052	8,850	2,906	96,880	33.75-40.0
1947	131,627	1,297,992	948	1,106,180	1,472	3,009	11,095	1,495	2,118	984	9,541	2,807	80,718	35.0
1946	143,635	1,514,544	4,107	757,391	2,471	3,435	8,394	282	1,272	791	8,248	2,665	92,500	31.5-35.0
1945	182,337	1,311,346	13,973	925,887	2,633	2,387	16,842	1,431	2,964	1,550	6,483	2,232	107,433	31.5
1944	247,616	1,315,677	45,629	848,390	4,893	9,198	19,712	2,993	3,527	1,285	4,321	2,198	118,293	31.5
1943	205,173	1,511,630	160,120	928,576	5,684	9,723	26,978	5,036	5,586	2,053	6,917	1,859	122,492	31.5
1942	190,748	1,583,024	112,876	981,607	4,441	7,163	33,218	5,798	4,439	2,422	4,142	1,712	114,275	31.5
1941	87,795	1,714,581	14,259	1,115,292	3,125	5,761	19,188	3,820	2,513	2,139	5,315	2,134	106,182	35.0
1940	44,038	1,435,928	2,982	736,612	2,531	2,805	12,664	3,292	2,163	2,575	4,152	1,968	83,760	35.0
1939	32,824	702,384	4,048	355,612	2,040	743	16,208	-----	1,984	2,133	2,920	1,010	85,200	35.0
1938	28,360	541,616	909	394,335	1,449	81	12,864	-----	1,613	1,384	2,300	-----	26,200	35.0
1937	45,071	1,021,353	2,600	620,386	1,666	2,781	15,061	-----	1,086	1,259	2,400	-----	47,884	35.0
1936	35,974	910,965	301	363,169	1,243	1,793	8,980	-----	140	343	1,965	-----	47,600	35.0
1935	29,599	429,520	577	290,151	1,140	406	5,446	-----	51	94	1,950	-----	34,200	35.0
1934	29,697	382,300	413	215,373	975	423	4,688	-----	13	414	1,850	-----	21,000	35.0
1933	21,444	175,656	944	130,492	426	155	2,880	-----	4	-----	1,650	-----	21,900	35.0
1932	19,910	123,910	174	99,840	188	46	1,186	-----	541	-----	1,450	-----	9,400	35.0
1931	43,951	562,820	300	238,031	668	84	1,578	-----	( <sup>4</sup> )	-----	2,070	-----	15,100	35.0
1930	75,080	655,836	90	365,811	334	1,847	1,880	-----	( <sup>4</sup> )	11,576	2,900	-----	25,300	35.0
1929	67,625	743,981	301	355,746	395	2,987	1,952	-----	( <sup>4</sup> )	19,519	4,350	-----	41,500	35.0
1928	52,483	479,033	739	242,583	575	1,428	1,665	-----	( <sup>4</sup> )	1,104	4,500	-----	30,300	37.0
1927	50,110	696,715	225	249,043	554	1,085	1,143	-----	( <sup>4</sup> )	13,886	3,380	-----	17,900	35.43
1926	51,810	826,560	158	241,320	658	1,267	716	-----	661	16,735	3,050	-----	19,300	35.63
1925	110,124	688,800	121	167,708	566	427	577	-----	432	4,735	2,300	-----	21,601	32.79
1924	63,297	565,600	323	132,544	269	-----	149	-----	( <sup>4</sup> )	14,117	2,240	-----	18,542	30.33
1923	35,280	469,280	254	145,256	114	-----	11	-----	127	4,177	1,550	-----	20,398	35.43
1922	15,013	476,200	398	100,891	-----	1,651	-----	-----	52	611	1,512	-----	7,472	38.25
1921	15,155	439,719	316	91,656	-----	1,614	-----	-----	403	10,308	945	-----	2,198	42.04
1920	105,750	671,736	2,802	168,308	103	1,949	17	-----	1,053	20,673	2,200	-----	24,246	42.32
1919	61,552	373,345	5,688	68,772	156	9,408	149	-----	568	6,026	2,447	-----	18,330	40.41
1918	342,573	550,259	92,322	112,159	2,408	11,750	431	-----	552	1,772	1,393	-----	36,613	40.82
1917	144,873	705,569	48,972	80,711	2,924	4,876	175	-----	968	-----	860	-----	37,763	41.52
1916	35,250	645,480	52,679	129,858	2,818	3,973	103	-----	920	-----	816	-----	36,325	41.85
1915	10,705	359,271	3,675	85,630	1,110	1,776	91	-----	1,254	-----	-----	-----	28,300	41.32
1914	2,951	317,289	662	83,648	471	299	1	-----	904	-----	-----	-----	17,549	41.37
1913	4,534	386,501	286	73,002	732	449	-----	-----	864	-----	-----	-----	23,723	41.16
1912	1,863	336,740	225	60,400	633	824	-----	-----	600	-----	-----	-----	23,159	-----
1911	2,752	198,074	134	42,045	542	-----	-----	-----	550	-----	-----	-----	14,915	-----

Year	Manganese ore (35% or more Mn) (gross weight)		Chromite (gross weight)		Tungsten concentrates, domestic output	Year	Manganese ore (35% or more Mn) (gross weight)		Chromite (gross weight)	
	Domestic output	Imports	Domestic output <sup>1</sup>	Imports			Domestic output	Imports	Domestic output <sup>1</sup>	Imports
1910	2,529	271,430	230	43,208	866	1888	32,702	1,324	1,680	4,973
1909	1,729	238,297	670	44,379	770	1887	38,667	1,826	3,360	1,572
1908	6,881	199,587	402	31,221	319	1886	33,816	2,036	2,240	3,759
1907	6,276	234,104	325	47,028	780	-----	-----	-----	-----	-----
1906	7,751	247,811	120	48,654	442	1885	26,049	1,886	3,024	13
1905	4,612	287,877	25	60,966	382	1884	11,402	675	2,240	2,998
1904	3,523	121,541	138	27,134	352	1883	6,894	1,485	3,360	-----
1903	3,164	163,583	168	25,684	139	1882	5,076	1,001	2,800	-----
1902	8,375	263,845	353	44,318	88	1881	5,482	1,908	2,240	-----
1901	13,434	185,609	412	22,525	85	1880	6,452	2,440	2,563	-----
1900	13,184	287,002	157	19,647	22	1879	-----	2,112	-----	-----
1899	11,127	210,951	-----	17,688	-----	1878	-----	701	-----	-----
1898	17,872	128,671	-----	18,260	-----	1877	-----	998	-----	-----
1897	12,441	134,356	-----	12,958	-----	1876	-----	461	-----	-----
1896	11,299	35,268	-----	880	-----	-----	-----	-----	-----	-----
1895	10,693	96,444	1,949	5,858	-----	1875	-----	227	-----	-----
1894	7,065	50,014	4,122	3,886	-----	1874	-----	876	-----	-----
1893	8,644	76,287	1,624	7,116	-----	1873	-----	1,155	-----	-----
1892	15,246	65,601	1,630	5,522	-----	1872	-----	1,351	-----	-----
1891	25,146	32,284	1,537	4,994	-----	1871	-----	1,183	-----	-----
1890	21,602	38,252	4,031	4,875	-----	1870	-----	1,570	-----	-----
1889	27,101	4,800	2,240	6,131	-----	1869	-----	547	-----	-----
1888	-----	-----	-----	-----	-----	1868	-----	1,139	-----	-----

<sup>1</sup>Cumulative production prior to 1880, 224,000 short tons.  
<sup>2</sup>Prior to 1923, gross weight; thereafter, tungsten content.

<sup>3</sup>Prior to 1934, gross weight; thereafter, vanadium content.  
<sup>4</sup>Not available.

Series M 225-231. Copper: 1845 to 1956

[In short tons, except price in cents per pound]

Year	Production				Imports, refined	Exports, refined	Price, New York, electrolytic, f. o. b. refinery	Year	Production				Price, New York, electrolytic, f. o. b. refinery
	Mine (re- coverable content)	Primary refined from domestic and foreign ores	Secondary						Mine (re- coverable content)	Primary refined from domestic and foreign ores	Secondary		
			Total	From old scrap							Total	From old scrap	
	225	226	227	228	229	230	231		225	226	227	228	231
1956	1,104,156	1,442,633	980,664	468,489	191,812	228,103	41.88	1900	308,059				16.54
1955	998,570	1,342,459	989,004	514,585	202,312	199,819	37.39	1899	284,333				17.75
1954	885,472	1,211,919	889,907	407,066	215,118	215,951	29.82	1898	263,256				12.01
1953	926,448	1,293,117	958,464	429,388	274,111	109,580	28.92	1897	247,039				11.30
1952	925,859	1,177,696	908,197	414,685	346,960	174,135	24.37	1896	230,031				10.92
1951	928,830	1,206,988	982,282	458,124	238,972	183,305	24.37	1895	190,307				10.70
1950	909,843	1,239,834	977,239	485,211	317,363	144,561	21.46	1894	177,094				9.43
1949	752,750	927,927	713,143	383,548	275,811	137,827	19.36	1893	164,677				10.65
1948	884,813	1,107,446	972,788	505,464	249,124	142,598	22.20	1892	172,499				11.50
1947	847,563	1,159,970	961,741	503,376	149,478	147,642	21.15	1891	142,061				12.88
1946	608,737	878,662	803,546	406,453	154,371	52,629	18.92	1890	129,832				15.75
1945	772,894	1,108,599	1,006,516	497,095	531,367	48,563	11.87	1889	113,388				13.75
1944	972,549	1,221,187	950,942	456,710	492,395	68,373	11.87	1888	113,181				16.80
1943	1,090,818	1,379,263	1,086,047	427,521	402,762	175,859	11.87	1887	90,739				11.25
1942	1,080,061	1,414,561	927,755	427,122	401,436	131,406	11.87	1886	78,881				11.00
1941	958,149	1,395,309	726,396	412,699	346,994	103,602	11.87	1885	82,938				11.10
1940	878,086	1,313,556	532,046	333,890	68,337	356,431	11.40	1884	72,473				13.75
1939	728,320	1,009,515	499,700	286,900	16,264	372,777	11.07	1883	57,763				15.88
1938	557,763	792,446	359,800	267,300	1,802	370,545	10.10	1882	45,323				18.50
1937	841,998	1,066,814	532,100	408,900	7,437	295,064	13.27	1881	35,840				18.25
1936	614,516	822,489	484,600	382,700	4,782	220,390	9.58	1880	30,240				21.50
1935	386,491	588,805	448,900	361,700	18,071	260,735	8.76	1879	25,760				18.62
1934	237,401	445,360	317,400	310,900	27,417	262,366	8.53	1878	24,080				16.56
1933	190,643	370,739	338,100	260,300	5,432	124,582	7.15	1877	23,520				19.00
1932	238,111	340,434	248,180	180,980	83,897	110,977	5.67	1876	21,280				21.00
1931	528,375	750,721	347,000	261,300	87,225	202,698	8.24	1875	20,160				22.69
1930	705,074	1,078,530	467,200	342,200	43,105	297,057	13.11	1874	19,600				22.00
1929	997,555	1,370,056	626,550	464,350	67,007	411,227	13.23	1873	17,360				28.00
1928	904,898	1,243,804	536,400	365,500	42,365	474,737	14.68	1872	14,000				35.56
1927	824,980	1,162,832	490,200	339,400	51,640	461,233	13.05	1871	14,560				24.12
1926	862,638	1,161,243	479,300	337,300	85,233	423,062	13.98	1870	14,112				21.19
1925	839,059	1,102,237	420,210	291,010	49,337	484,033	14.16	1869	14,000				24.25
1924	808,033	1,130,038	388,300	266,200	72,955	504,812	13.16	1868	12,992				23.00
1923	738,870	989,918	410,900	270,900	1,303,366	364,690	14.61	1867	11,200				25.38
1922	432,292	627,758	335,900	202,300	51,572	326,333	13.56	1866	9,968				34.25
1921	233,095	475,339	217,300	131,990	34,625	238,059	12.65	1865	9,520				39.25
1920	612,275	763,033	312,460	168,960	54,372	275,613	17.50	1864	8,960				47.00
1919	606,167	885,034	287,190	152,600	17,569	219,080	18.90	1863	9,520				33.88
1918	955,011	1,197,149	352,670	176,670	19,044	345,014	29.19	1862	10,580				21.88
1917	947,717	1,210,897	383,400	194,900	3,376	515,390	29.19	1861	8,400				22.25
1916	1,002,938	1,129,694	350,000	175,000	4,206	358,308	28.46	1860	8,064				22.88
1915	744,036	817,102	196,187	121,187			17.47	1859	7,056				22.00
1914	574,216	766,891	127,382	87,382			13.31	1858	6,160				23.00
1913	617,785	807,534	136,500	91,500			15.52	1857	5,376				25.00
1912	624,547	784,052	137,500	107,000			16.48	1856	4,480				27.00
1911	557,332	716,938	107,000	76,000			12.55	1855	3,360				27.00
1910	544,119	711,020	94,500	64,500			12.88	1854	2,520				22.00
1909	563,261	695,511					13.11	1853	2,240				22.00
1908	478,420	568,981					13.39	1852	1,232				22.00
1907	423,576	516,258					20.86	1851	1,008				16.60
1906	458,486	539,526					19.77	1850	728				22.00
1905	444,392						15.98	1849	734				
1904	406,269						13.11	1848	560				
1903	349,022						13.62	1847	336				
1902	329,754						11.96	1846	168				
1901	301,036						16.40	1845	112				

<sup>1</sup> Imports of refined copper from Chile, as reported by the Chile Exploration Co., were included by *Mineral Resources of the United States* in place of those of the Bureau of Foreign and Domestic Commerce which were considered too low.

<sup>2</sup> Includes some refined copper imports.

LEAD AND ZINC

M 232-245

Series M 232-245. Lead and Zinc: 1801 to 1956

[In short tons, except price in cents per pound]

Year	Lead							Zinc						
	Production				Imports, refined	Exports, refined	Price, New York, pig lead	Production				Imports, refined	Exports, refined	Price, New York, slab zinc
	Mine (recoverable content)	Primary refined from domestic and foreign ores	Secondary					Mine (recoverable content)	Primary smelter slab zinc from domestic and foreign ores	Secondary				
			Total	From old scrap	Total	From old scrap								
232	233	234	235	236	237	238	239	240	241	242	243	244	245	
1956	352,826	542,308	506,755	445,516	262,204	4,628	18.01	542,840	988,610	281,855	73,746	244,726	8,813	13.99
1955	338,025	479,157	502,051	449,188	263,977	408	15.14	514,671	963,504	304,775	83,549	195,059	18,069	12.80
1954	325,419	486,712	480,925	424,987	274,286	596	14.05	478,471	802,425	271,774	72,657	160,138	24,994	11.19
1953	342,844	467,891	486,737	428,750	379,119	808	13.48	547,430	916,105	294,678	64,235	179,969	17,969	11.58
1952	390,162	472,852	471,294	411,881	510,718	1,762	16.47	666,001	904,479	310,423	74,665	118,058	57,714	17.08
1951	388,164	417,698	518,110	441,658	179,021	1,281	17.49	681,189	881,638	314,377	6,174	88,048	36,510	18.75
1950	480,827	508,314	482,275	427,520	494,410	2,785	13.30	623,375	843,467	326,030	74,097	155,832	12,917	14.60
1949	409,908	477,838	412,183	384,140	272,437	969	15.36	593,203	814,782	237,818	51,651	125,564	58,709	12.86
1948	390,476	406,694	500,071	432,733	244,692	399	13.04	629,977	787,764	324,639	74,190	92,495	65,637	14.21
1947	384,221	441,010	511,970	444,578	158,705	1,523	14.67	637,608	802,495	310,798	74,979	72,068	108,669	11.01
1946	335,475	338,197	392,787	344,593	104,088	598	8.11	574,333	728,262	300,682	77,223	104,065	47,224	9.15
1945	390,831	443,585	363,039	309,849	227,311	1,408	6.50	614,358	764,561	360,444	91,266	96,760	7,782	8.65
1944	416,861	464,768	331,416	289,933	223,379	15,523	6.50	718,642	869,302	345,469	113,161	68,626	21,576	8.65
1943	458,313	469,612	342,094	310,708	244,033	2,003	6.50	744,196	942,309	368,488	84,225	56,155	97,439	8.68
1942	496,239	566,839	323,001	308,588	387,693	1,940	6.48	768,025	891,872	330,526	72,987	36,352	133,938	8.68
1941	461,426	570,967	397,416	380,280	325,999	14,359	5.79	749,125	822,020	283,967	31,154	40,288	89,309	7.87
1940	457,392	533,179	260,346	226,583	36,882	23,755	5.18	665,068	675,275	222,013	64,204	10,146	79,091	6.78
1939	413,979	484,085	210,800	210,800	4,772	74,392	5.05	583,507	507,236	189,640	45,100	30,980	4,615	5.51
1938	369,726	383,669	224,900	224,900	2,001	145,866	4.74	516,703	446,341	119,000	-----	7,230	(?)	4.99
1937	384,892	467,317	275,100	-----	2,355	20,091	6.01	626,362	556,904	166,000	-----	37,208	249	6.87
1936	372,919	399,156	262,900	-----	1,979	18,313	4.71	575,574	492,132	161,000	-----	11,660	37	5.28
1935	331,103	324,560	270,400	-----	1,368	6,982	4.06	517,903	420,634	129,000	-----	4,444	1,617	4.70
1934	287,339	311,236	208,400	-----	285	5,909	3.86	438,726	363,590	95,000	-----	1,725	5,105	4.51
1933	272,677	263,676	224,500	-----	45	22,835	3.87	384,280	307,182	120,000	-----	1,890	1,145	4.40
1932	292,968	281,941	198,300	-----	44	23,516	3.18	285,231	207,143	70,600	-----	310	6,471	3.25
1931	404,622	442,764	234,700	-----	10	21,665	4.24	410,318	291,996	102,000	-----	274	643	3.99
1930	558,313	643,033	255,800	-----	571	48,307	5.52	595,425	498,045	127,400	-----	281	4,633	4.91
1929	647,995	774,633	311,000	-----	10,089	73,251	6.35	724,478	625,447	176,200	-----	226	14,411	6.84
1928	627,153	781,071	308,600	-----	10,244	116,269	6.31	695,170	602,581	181,700	-----	-----	25,289	6.38
1927	665,489	796,530	276,000	-----	4,967	125,267	6.75	718,541	592,516	168,300	-----	39	45,695	6.60
1926	683,917	798,941	277,300	-----	12,133	71,936	8.42	774,563	618,422	168,000	-----	-----	42,920	7.72
1925	684,439	766,969	226,880	-----	7,732	103,519	9.02	710,347	572,946	156,000	-----	-----	76,351	8.01
1924	596,068	690,493	204,500	-----	13,681	32,090	8.08	637,977	517,339	157,000	-----	11	72,583	6.70
1923	547,217	618,322	194,490	-----	21,463	50,735	7.25	610,690	510,434	164,000	-----	1	49,211	7.01
1922	477,633	582,662	159,560	-----	4,282	33,178	5.71	472,032	354,277	161,000	-----	40	30,286	6.09
1921	414,491	448,589	103,780	-----	30,955	26,624	4.55	256,640	200,500	93,000	-----	6,598	3,009	5.15
1920	496,814	529,657	124,650	-----	34,451	20,093	8.08	537,524	463,377	141,000	-----	-----	102,178	8.13
1919	429,589	482,220	122,100	-----	5,087	51,486	5.81	548,846	465,743	130,300	-----	32	122,002	7.39
1918	562,402	640,195	97,100	-----	570	101,247	7.46	636,091	517,927	137,000	-----	11	86,438	8.31
1917	623,464	610,769	93,500	-----	378	91,340	8.71	713,556	669,573	132,000	-----	18	201,968	9.11
1916	601,392	571,134	96,300	-----	3,194	110,380	6.83	703,169	663,343	129,200	-----	21	193,853	13.75
1915	542,098	550,055	78,900	-----	499	126,924	4.67	588,060	489,519	108,800	-----	63	131,378	14.44
1914	504,769	542,122	61,062	-----	288	58,722	3.87	415,774	353,049	84,600	-----	195	64,302	5.30
1913	483,113	462,460	72,834	-----	2,311	-----	4.40	413,324	346,676	89,528	-----	5,165	7,733	5.80
1912	442,126	480,894	67,168	-----	2,596	-----	4.48	385,621	338,806	94,111	-----	10,719	6,634	7.11
1911	426,585	486,979	54,234	-----	3,556	-----	4.46	331,515	286,526	74,747	-----	323	6,872	5.91
1910	382,692	470,272	55,422	-----	3,388	-----	4.49	324,444	269,184	68,998	-----	989	3,990	5.66
1909	385,113	446,909	41,687	-----	3,548	-----	4.30	302,373	255,760	48,232	-----	9,419	2,566	5.52
1908	330,237	396,564	18,533	-----	2,673	-----	4.23	234,064	210,424	23,226	-----	776	2,640	4.74
1907	364,715	413,389	25,498	-----	7,334	55	5.35	253,017	249,860	25,532	-----	1,709	563	6.20
1906	-----	404,746	-----	-----	12,441	74	5.66	-----	224,770	-----	-----	1,021	4,670	6.27

<sup>1</sup> Includes sheets and pipes; figures not available separately.  
<sup>2</sup> Not available.

<sup>3</sup> Comprises reclaimed scrap; no recorded imports of pigs and bars.  
<sup>4</sup> Excludes output of Virginia (Bureau of Mines was not at liberty to publish).

Series M 232-245. Lead and Zinc: 1801 to 1956—Con.

[In short tons, except price in cents per pound]

Year	Lead				Zinc				Year	Lead		
	Production, primary refined from domestic and foreign ores	Imports, refined	Exports, refined	Price, New York, pig lead	Production, primary smelter slab zinc from domestic and foreign ores	Imports, refined	Exports, refined	Price, New York, slab zinc		Production, primary refined from domestic and foreign ores	Exports, refined	Price, New York, pig lead
	233	236	237	238	240	243	244	245		233	237	238
1905	888,307	5,190	63	4.70	203,849	428	5,516	6.00	1852	15,700	874	4.80
1904	898,452	8,667	35	4.32	186,702	841	10,147	5.17	1851	18,500	115	4.85
1903	868,989	4,486	56	4.26	159,219	202	1,521	5.62	1850	22,000		4.80
1902	867,892	6,222	3,271	4.10	156,927	448	3,237	4.90	1849	23,500		4.78
1901	871,082	1,802	2,893	4.86	140,822	278	3,890	4.08	1848	25,000		4.26
1900	867,773	1,887	997	4.41	123,886	884	22,410	4.40	1847	28,000		4.37
1899	298,047	1,737	47	4.47	129,051	1,392	6,755	5.75	1846	28,000		4.73
1898	802,148	156	59	3.78	115,399	1,303	10,499	4.57	1845	30,000		4.03
1897	282,169	8,025	3,863	3.58	99,980	1,453	14,245	4.12	1844	26,000		3.90
1896	257,487	5,276	3,180	2.98	81,499	520	10,130	3.94	1843	25,000		3.58
1895	235,822	54,776	848	3.23	89,686	372	1,530	3.63	1842	24,000		3.81
1894	213,650	19,584	(*)	3.29	75,328	194	1,804	3.52	1841	20,500		4.50
1893	224,320	1,980	(*)	3.73	78,832	213	3,723	4.08	1840	17,000		4.89
1892	208,223	775	(*)	4.09	87,260	149	6,247	4.63	1839	17,500		5.33
1891	198,363	1,696	(*)	4.35	80,873	404	2,147	5.02	1838	15,000		5.29
1890	157,844	9,668	(*)	4.48	63,683	999	1,648	5.56	1837	13,500		5.96
1889	178,357	1,387	(*)	3.93	58,860	1,026	440	5.02	1836	15,000		6.37
1888	156,015	1,291	(*)	4.42	55,903	1,913	31	4.91	1835	13,000		6.50
1887	156,630	3,858	(*)	4.50	50,340	4,194	68	4.62	1834	12,000		5.12
1886	132,189	8,791	(*)	4.63	42,641	2,150	459	4.40	1833	11,000		5.91
1885	126,192	2,931	(*)	3.95	40,638	1,758	51	4.34	1832	10,000		5.94
1884	136,297	1,536	(*)	3.74	38,544	2,935	63	4.44	1831	7,500	4.56-6.00	
1883	140,297	2,019	(*)	4.32	36,872	8,534	426	4.50	1830	8,000		3.75
1882	129,780	3,040	(*)	4.91	33,765	9,204	745	5.32	1829	8,571		3.75
1881	114,495	2,161	(*)	4.81	30,258	1,430	746	5.24	1828	7,452		5.39
1880	95,725	3,362	(*)	5.04	25,100	4,046	684	5.51	1827	4,490		6.14
1879	90,840	608	(*)	4.14	21,300	710	1,066	5.04	1826	2,379		6.75
1878	89,130	3,359	(*)	3.61	19,600	635	1,273	4.88	1825	2,232		7.59
1877	80,330	7,292	(*)	5.49	15,600	633	710	6.03	1824	1,987		6.39
1876	62,940	7,165	(*)	6.13	17,000	474	67	7.25	1823	2,068		5.36
1875	58,590	16,385	(*)	5.85	16,700	1,017	19	7.00	1822	1,900		6.35
1874	51,230	23,102	(*)	6.01	13,100	1,797	22		1821	1,900		6.63
1873	41,940	36,212	(*)	6.32	9,600	3,420	37		1820	1,500		6.36
1872	25,720	36,543	(*)	6.30	7,800	5,901	31		1819	1,500		6.70
1871	19,970	45,748	(*)	6.08	6,900	5,580	38		1818	1,500		
1870	17,830	42,948	(*)	6.25	5,400	4,611	55		1817	1,500		
1869	17,500	43,933	(*)	6.45	4,300	6,606			1816	1,500		
1868	16,400	31,627	219	6.50	3,700	4,664	511		1815	1,500	17.86	
1867	15,200	32,661	50	6.50	3,200	2,876	156		1814	1,500		
1866	16,100		13	6.90	2,000		70		1813	1,500		
1865	14,700		426	6.60	2,100		92		1812	1,500	11.16	
1864	15,300		112	7.10	1,800		48	13.9	1811	1,500		
1863	14,800		119	6.25	1,700				1810	1,000		
1862	14,200		40	6.10	1,500				1809	1,000		
1861	14,100		55	5.25	1,500				1808	1,000		
1860	15,600		452	5.65	800				1807	1,000		
1859	16,400		157	5.50	50				1806	1,000		
1858	15,300		450	5.94	20				1805	1,000		
1857	15,800		435	6.18					1804	1,000		
1856	16,000		155	6.59					1803	1,000		
1855	15,800		83	6.87					1802	1,000		
1854	16,500		202	6.57					1801	1,000		
1853	16,800		50	6.45				5.5				

\* Not available.  
 † Part of this is foreign lead mistakenly designated by customs collectors as domestic lead.

‡ Derived from Bureau of the Census.  
 † 1801-1820 estimates based on 5-year averages.

Series M 246-248. Gold and Silver: 1792 to 1956

[In thousands of fine troy ounces, except price in cents per fine ounce]

Year	Silver			Year	Gold, production	Silver			Year	Gold, production	Silver			Year	Gold, production	Silver			
	Production	Average price, New York				Production	Average price, New York	Production			Average price, New York		Production			Average price, New York	Production	Average price, New York	
		246	247								248	246						247	248
1956	1,832	38,948	90.830	1924	2,444	64,071	66.781	1898	1,739	60,000	78.200	1862	1,896	3,480	135.000				
1955	1,880	37,198	89.099	1923	2,405	70,356	64.878	1892	1,597	68,600	87.600	1861	2,080	1,547	133.000				
1954	1,837	36,941	85.250	1922	2,298	61,208	67.528	1891	1,605	58,830	98.800	1860	2,225	116	135.000				
1953	1,958	37,571	85.188	1921	2,845	46,171	62.654	1890	1,589	54,516	104.600	1859	2,419	77	136.000				
1952	1,893	39,452	84.941	1920	2,888	56,537	100.900	1889	1,595	50,094	98.600	1858	2,419	39	134.000				
1951	1,981	39,765	89.368	1919	2,788	51,899	111.122	1888	1,604	45,798	94.000	1857	2,661	39	135.000				
1950	2,394	42,459	74.169	1918	3,213	68,059	96.772	1887	1,608	41,722	97.800	1856	2,661	39	134.000				
1949	1,992	34,675	71.980	1917	3,900	70,662	81.417	1886	1,687	39,694	99.500	1855	2,661	39	134.000				
1948	2,014	38,096	74.361	1916	4,417	78,858	61.417	1885	1,538	39,909	106.500	1854	2,902	39	135.000				
1947	2,109	35,824	71.820	1915	4,754	72,354	49.684	1884	1,490	37,744	111.300	1853	3,144	39	135.000				
1946	1,575	22,915	80.151	1914	4,418	69,623	54.811	1883	1,451	35,733	111.000	1852	2,902	39	133.000				
1945	955	29,024	51.928	1913	4,311	71,187	59.791	1882	1,572	36,197	114.000	1851	2,661	39	134.000				
1944	998	34,474	44.750	1912	4,466	66,084	60.835	1881	1,679	38,258	118.000	1850	2,419	39	132.000				
1943	1,364	41,461	44.750	1911	4,686	61,108	58.304	1880	1,742	30,319	115.000	1849	1,985	39	135.000				
1942	3,457	54,091	38.333	1910	4,585	57,597	58.486	1879	1,822	31,566	122.000	1848	484	39	135.000				
1941	4,781	67,048	34.788	1909	4,798	57,313	51.502	1878	2,477	35,022	115.000	1847	48	39	135.000				
1940	4,870	70,436	34.778	1908	4,435	50,876	52.864	1877	2,269	30,778	120.000	1846	55	39	135.000				
1939	4,673	64,378	39.082	1907	4,227	52,500	65.327	1876	1,932	29,996	116.000	1845	49	39	135.000				
1938	4,267	61,706	43.225	1906	4,708	57,362	66.791	1875	1,619	24,530	124.000	1844	55	19	135.000				
1937	4,117	71,409	44.888	1905	4,265	56,272	60.352	1874	1,620	28,868	127.800	1843	58	19	135.000				
1936	3,783	61,153	45.087	1904	3,911	56,000	57.221	1873	1,742	27,650	129.700	1842	43	19	135.000				
1935	3,237	48,519	64.278	1903	3,560	54,300	58.570	1872	1,742	22,236	132.200	1841	30	19	135.000				
1934	2,779	32,782	47.973	1902	3,870	55,500	52.160	1871	2,104	17,789	132.500	1840	24	19	135.000				
1933	2,292	28,129	34.727	1901	3,806	55,214	58.950	1870	2,419	12,875	132.800	1839	23	19	135.000				
1932	2,269	22,762	27.892	1899	3,830	57,647	61.330	1869	2,395	9,281	132.500	1838	24	19	135.000				
1931	2,225	29,857	28.700	1898	3,437	54,764	59.580	1868	2,322	9,281	132.600	1837	16	19	135.000				
1930	2,139	47,725	38.154	1897	3,118	54,438	58.260	1867	2,502	10,441	133.000	1836	26	19	135.000				
1929	2,059	60,860	52.993	1896	2,775	58,860	59.790	1866	2,588	7,734	133.900	1835	39	19	135.000				
1928	2,148	57,872	58.176	1895	2,568	58,835	67.060	1865	2,575	8,701	138.700	1834	368	193	135.000				
1927	2,107	59,626	56.370	1894	2,255	55,727	65.280	1864	2,230	8,508	134.500	1833	677	193	135.000				
1926	2,233	62,487	62.107	1893	1,911	49,500	68.000	1863	1,985	6,574	134.500	1832	677	193	135.000				
1925	2,307	66,710	69.065																

Series M 249-258. Bauxite, Aluminum, and Magnesium: 1886 to 1956

Year	Bauxite		Aluminum					Magnesium, domestic output (1,000 short tons)			Year	Bauxite		Aluminum					Magnesium, domestic output, primary (1,000 short tons)	
	Domestic output (1,000 long tons)	Imports (1,000 long tons)	Production (1,000 short tons)			Imports, crude and semi-crude (1,000 short tons)	Price, primary ingot (cents per pound)	Secondary				Domestic output (1,000 long tons)	Imports (1,000 long tons)	Production (1,000 short tons)			Imports, crude and semi-crude (1,000 short tons)	Price, primary ingot (cents per pound)		
			Primary from domestic and foreign ores	Secondary				Primary	Total	From old scrap				Primary from domestic and foreign ores	Secondary, total	Imports, crude and semi-crude (1,000 short tons)				Price, primary ingot (cents per pound)
				Total	From old scrap															
249	250	251	252	253	254	255	256	257	258	249	250	251	252	254	255	250				
1956	1,743	5,670	1,679	340	72	265	26.01	68	11	5	1920	521	43	69	16	20	32.72	(1)		
1955	1,788	4,882	1,566	336	76	239	23.67	61	10	5	1919	377	6	64	19	7	32.14	(1)		
1954	1,995	4,988	1,461	292	60	244	21.78	70	8	3	1918	606	4	62	15	1	33.58	(1)		
1953	1,580	4,230	1,252	369	79	359	20.93	98	12	6	1917	569	8	65	16	(1)	51.59	(1)		
1952	1,667	3,462	937	305	71	151	19.41	106	11	7	1916	425	(1)	58	19	3	60.71	(1)		
1951	1,849	2,820	837	298	77	162	19.00	41	12	6	1915	300	3	45	8	5	33.98	(1)		
1950	1,335	2,538	719	244	76	256	17.71	16	9	5	1914	219	25	29	5	9	18.63	---		
1949	1,149	2,730	603	181	45	125	17.00	12	6	3	1913	211	21	24	5	13	23.64	---		
1948	1,457	2,558	623	287	96	161	15.73	10	8	4	1912	161	26	21	---	11	22.01	---		
1947	1,202	1,842	572	345	164	81	15.00	12	10	5	1911	157	43	19	---	2	20.07	---		
1946	1,104	851	410	278	91	57	15.00	5	5	1	1910	151	16	18	---	---	22.25	---		
1945	981	737	495	298	27	339	15.00	33	9	1	1909	132	19	15	---	---	22.00	---		
1944	2,324	556	776	326	23	108	15.00	157	14	(1)	1908	50	22	5	---	---	28.70	---		
1943	6,233	1,542	920	314	33	136	15.00	184	11	(1)	1907	94	25	8	---	---	45.00	---		
1942	2,602	884	521	196	42	112	15.00	49	6	(1)	1906	71	18	7	---	---	35.75	---		
1941	987	1,117	309	107	43	13	16.50	16	2	(1)	1905	57	12	5	---	---	35.00	---		
1940	439	630	206	80	46	18	18.69	6	---	---	1904	51	15	4	---	---	35.00	---		
1939	375	520	164	54	38	14	20.00	3	---	---	1903	45	15	3	---	---	33.00	---		
1938	311	456	143	89	---	9	20.00	2	---	---	1902	27	16	3	---	---	33.00	---		
1937	425	507	146	68	---	23	20.08	2	---	---	1901	20	18	3	---	---	33.00	---		
1936	380	323	112	52	---	13	20.50	2	---	---	1900	23	9	3	---	---	32.72	---		
1935	245	200	60	51	---	9	21.58	2	---	---	1899	33	7	2	---	---	32.72	---		
1934	169	167	37	46	---	9	21.58	2	---	---	1898	25	1	1	---	---	30.58	---		
1933	154	150	43	34	---	8	23.80	1	---	---	1897	21	---	1	---	---	39.00	---		
1932	96	206	52	24	---	4	23.80	(1)	---	---	1896	18	---	1	---	---	50.75	---		
1931	196	306	89	30	---	7	23.80	(1)	---	---	1895	17	---	(1)	---	---	58.66	---		
1930	331	410	115	39	---	13	23.79	(1)	---	---	1894	11	---	(1)	---	---	---	---		
1929	366	381	114	48	---	25	23.90	(1)	---	---	1893	9	---	(1)	---	---	---	---		
1928	375	350	105	48	---	19	23.90	(1)	---	---	1892	11	---	(1)	---	---	---	---		
1927	321	357	82	46	---	31	25.40	(1)	---	---	1891	4	---	(1)	---	---	---	---		
1926	392	282	74	44	---	36	26.99	(1)	---	---	1890	2	---	(1)	---	---	---	---		
1925	317	354	70	44	---	21	27.19	(1)	---	---	1889	1	---	(1)	---	---	---	---		
1924	348	202	75	27	---	16	27.03	(1)	---	---	1888	---	---	(1)	---	---	---	---		
1923	523	119	64	21	---	21	25.41	(1)	---	---	1887	---	---	(1)	---	---	---	---		
1922	310	24	37	16	---	22	18.68	(1)	---	---	1886	---	---	(1)	---	---	---	---		
1921	140	28	27	9	---	16	21.11	(1)	---	---										

<sup>1</sup> Less than 500 tons.

Series M 259-274. Injuries and Fatalities in Coal Mining, Quarrying and Related Industries, and Metal and Nonmetal Mines: 1870 to 1956

Year	All coal mining				Quarrying and related industries				Metal and nonmetal mines					
	Number of injuries		Frequency rate per million man-hours		Number of injuries		Frequency rate per million man-hours <sup>1</sup>		Number of injuries		Frequency rate per million man-hours <sup>2</sup>		Frequency rate per 1,000 300-day workers	
	Fatal	Nonfatal	Fatal <sup>3</sup>	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal <sup>4</sup>	Fatal	Nonfatal	Fatal	Nonfatal	Fatal	Nonfatal
	259	260	261	262	265	266	267	268	269	270	271	272	273	274
1956	448	19,816	1.0	46	50	3,754	0.8	21	106	6,323	0.6	36		
1955	420	18,895	1.0	45	53	3,811	.8	22	98	6,993	.6	42		
1954	396	17,718	1.0	46	84	3,890	.2	22	95	5,950	.6	37		
1953	461	24,258	0.9	47	43	4,450	.2	23	114	7,583	.6	41		
1952	548	30,074	0.9	51	74	4,508	.4	24	131	7,855	.7	42		
1951	785	35,558	1.1	51	57	4,945	.8	26	112	8,175	.6	43		
1950	643	37,264	0.9	52	54	4,762	.8	25	103	7,849	.6	45		
1949	585	35,405	0.9	55	66	4,825	.4	26	79	8,065	.5	47		
1948	999	53,472	1.1	60	75	4,934	.4	28	119	8,807	.6	47		
1947	1,158	57,660	1.2	61	75	5,504	.4	32	138	9,601	.7	52		
1946	968	55,350	1.1	63	55	5,137	.4	32	116	8,714	.7	55		
1945	1,068	57,117	1.1	60	53	4,121	.4	32	112	8,067	.7	49		
1944	1,298	63,691	1.2	59	78	4,437	.6	34	147	10,177	.8	54		
1943	1,451	64,594	1.4	62	90	5,199	.5	33	220	13,004	.9	56		
1942	1,471	66,774	1.4	65	112	6,349	.6	35	237	13,957	.9	56		
1941	1,266	61,057	1.4	66	76	6,370	.4	40	230	15,772	.9	62		
1940	1,388	57,776	1.6	69	72	5,188	.5	35	223	14,766	1.0	64		
1939	1,078	51,773	1.4	68	48	5,204	.8	36	173	13,710	.8	66		
1938	1,105	49,636	1.6	71	82	5,027	.6	38	166	12,722	.8	68		
1937	1,413	66,259	1.6	73	77	6,348	.5	40	219	18,055	.9	75		
1936	1,342	67,540	1.4	73	91	5,717	.6	39	199	14,650	1.0	72		
1935	1,242	63,426	1.5	77	51	4,152	.5	38	164	10,206	1.0	63		
1934	1,226	65,559	1.4	77	60	3,924	.6	41	118	7,892	1.0	68		
1933	1,064	59,129	1.3	75	59	3,637	.7	41	95	5,925	1.0	63		
1932	1,207	56,283	1.7	80	32	3,574	.8	38	107	5,014	1.2	54		
1931	1,463	77,958	1.7	88	61	5,427	.5	41	158	8,709	1.0	56	2.5	140
1930	2,063	99,981	1.9	91	105	7,417	.6	40	271	15,594			2.9	163
1929	2,187		1.9		126	9,810	.6	46	350	23,092			3.0	200
1928	2,176		1.9		119	10,568	.5	47	273	22,433			2.5	206
1927	2,231		1.8		135	13,459	.6	59	352	25,133			3.1	222
1926	2,518		1.9		154	13,201	.7	57	430	30,350			3.5	245
1925	2,234		1.9		149	14,165	.6	61	371	35,132			3.0	234
1924	2,402		2.0		138	14,777	.6	62	418	33,118			3.5	278
1923	2,462		1.8		143	14,990	.6	63	367	33,563			3.0	275
1922	1,984		2.0		132	11,839	.7	61	344	26,080			3.5	268
1921	1,995		1.7		120	10,465	.7	62	230	18,604			3.1	250
1920	2,272		1.6		178	11,217	.8	52	425	32,562			3.2	242
1919	2,323		1.8		123	9,199	.7	51	468	31,506			3.5	234
1918	2,580		1.6		125	8,719	.8	52	646	42,915			3.6	237
1917	2,696		1.7		131	13,242	.6	66	852	46,236			4.4	241
1916	2,226		1.5		173	13,427	.8	63	697	48,237			3.6	251
1915	2,269		1.7		148	9,671	.6	42	553	35,295			3.9	249
1914	2,454		1.8		180	7,836	.9	41	559	30,216			3.9	212
1913	2,785		1.8		133	7,739	.8	32	633	32,971			3.7	180
1912	2,419		1.7		213	6,552	.8	25	661	30,724			4.1	190
1911	2,656		1.9		188	5,390	.8	23	695	26,577			4.4	170

Year	All coal mining fatalities			Year	All coal mining fatalities			Year	All coal mining fatalities	
	Number	Per 1,000 300-day workers	Per 1,000 employed		Number	Per 1,000 300-day workers	Per 1,000 employed		Number	Per 1,000 employed
	259	263	264		259	263	264		259	264
1910	2,821	5.3	3.9	1896	1,083	4.6	2.8	1882	502	2.8
1909	2,642	5.4	4.0	1895	1,142	4.7	3.0	1881	416	2.9
1908	2,445	5.5	3.6	1894	958	4.5	2.7			
1907	3,242	6.2	4.8	1893	958	4.0	2.7	1880	280	2.2
1906	2,138	4.9	3.4	1892	991	4.4	3.1	1879	329	3.3
				1891	956	4.3	3.1	1878	260	2.6
								1877	244	2.8
1905	2,232	5.1	3.6					1876	256	2.8
1904	1,995	5.2	3.5	1890	733	3.5	2.5			
1903	1,926	4.7	3.5	1889	668		2.4			
1902	1,724	5.2	3.4	1888	728		2.6	1875	260	3.1
1901	1,574	4.5	3.3	1887	535		2.2	1874	260	3.9
				1886	530		2.2	1873	263	5.5
1900	1,489	4.9	3.4							
1899	1,241	4.4	3.1	1885	574		2.6	1872	223	5.0
1898	1,062	4.3	2.7	1884	762		2.8	1871	210	5.6
1897	990	4.3	2.6	1883	593		3.3	1870	211	5.9

<sup>1</sup> Man-hours for 1911-1923 computed on assumption that weighted average length of workday was 9.36 hours, as shown by reports from representative operating companies for 1924.  
<sup>2</sup> Man-hours not available prior to 1931.  
<sup>3</sup> Figures for 1930-1956 are on a portal-to-portal basis; earlier years are on a working-time basis. The 1930 frequency rate for fatalities per million man-hours on a portal-to-portal basis was 1.9, the working-time rate was 2.1.  
<sup>4</sup> Injury rate for years before 1916 are believed not to be representative, owing to probable incompleteness of reports of slight or minor injuries.  
<sup>5</sup> Accident reports for mines in the gold, silver, and miscellaneous metal group are

not complete as to nonfatal injuries before 1916.  
<sup>6</sup> Fatalities per million man-hours are available for bituminous coal back to 1906 as follows: 1910, 2.1; 1909, 2.1; 1908, 2.1; 1907, 2.5; 1906, 1.8 (Bureau of Mines Bulletin 456, p. 108). Fatalities per million man-hours are available for anthracite back to 1903 as follows: 1910, 1.7; 1909, not available; 1908, 2.2; 1907, 2.1; 1906, 2.0; 1905, 2.0; 1904, 2.1; 1903, 1.9 (Bureau of Mines Bulletin 115, p. 288. Converted from per thousand 2,000-hour workers to per million man-hours).  
<sup>7</sup> Data reflect only Pennsylvania anthracite fatalities; data for bituminous coal mining are not available prior to 1874.