

## CHAPTER VI.

# PETROLEUM AND NATURAL GAS.

### INTRODUCTION.

**Arrangement of report.**—This report is arranged in five parts. Part I treats of the industry as a whole; Part II covers the supplementary data for the petroleum branch of the industry—that is, that in which petroleum was the principal product; Part III deals with the supplementary data for the natural gas branch of the industry, in which the principal product was natural gas; Part IV contains statistics for those operators who reported oil wells only or gas wells only; and Part V presents five general tables containing the statistics of petroleum and natural gas enterprises from which the special tables of Parts I, II, and III are derived.

**Definitions and explanations.**—In order that the text and tables of this report may be entirely clear, the following definitions and explanations of terms used are submitted:

**Scope of census.**—The statistics of petroleum and natural gas refer to the United States exclusive of all outlying possessions.

The census returns cover enterprises engaged in three general classes of operations. First, those which confined their operations entirely to the production of either petroleum or natural gas or of both; second, those which produced petroleum or natural gas and were also engaged in the drilling of new wells; and, third, those which were engaged in the drilling of new wells only, and which reported no products for the year.

Reports were obtained for all enterprises that were operating or drilling wells during any portion of the census year. Operators whose wells were idle during the entire year 1909 were omitted from the canvass.

**Period covered.**—The returns cover the calendar year 1909, or the business year which corresponded most nearly to that calendar year. The statistics include a year's operations for all enterprises except those whose wells were shut down during a portion of the year, in which case, of course, the returns cover only that part of the year during which the enterprises were active.

**Number of operators.**—In determining the number of operators' subsidiary companies have not been considered as separate operators, but each holding or owning company, together with all its subsidiary concerns, has been counted as one operator. There were certain operators who reported enterprises in two or more states or fields. In making up the total for the United States these duplications have been eliminated, but in making up the totals for each state and each field every enterprise has been counted as an operator wherever it appeared.

**Persons engaged in the industry.**—The statistics of the number of proprietors and firm members, salaried employees, and wage earners are based on the returns for December 15, 1909, or the nearest representative day. The wage earners reported include "bosses" performing work similar to that of the men over whom they had charge, but foremen whose duties were wholly supervisory are included among salaried employees.

**Oil and gas land controlled.**—The acreage of oil and gas land shown covers the holdings of none but operating concerns, which include both those engaged in production and those engaged in the drilling of new wells; since the operators reported their total land holdings, however, the acreage given includes large areas not actually producing or in process of development, but held in reserve for future development.

**Capital.**—Operators were required to report the total amount of capital, both owned and borrowed, which they had invested in the business on the last day of the business year. This includes the operator's investment in property owned, together with cash on hand, operating accounts, and bills receivable. The value of lands, buildings, and equipment held under lease is not included in the amount reported, but the capital reported does cover the value of the leases themselves. Owing to the diversity of methods of book-keeping in use by different companies, and to the fact that some operators apparently reported capital stock at par value instead of actual capital invested, as well as to the further fact that in some cases the returns included investments in large areas of reserve oil and gas lands, the returns for capital lack uniformity and can be used only to show very general conditions.

**Expenses.**—The expenses reported include all direct expenses of the operation of producing wells and of the drilling of new wells. Interest payments are not included, nor has any direct allowance been made for depreciation.

In the production of petroleum and natural gas, depreciation is of two kinds: (1) The gradual destruction of the investment in oil and gas land, due to the flow of the supply of oil and gas; (2) the gradual destruction of the investment in the development of the wells, due partly to the deterioration of equipment and construction, and partly to the fact that wells lose all their value when the oil and gas are exhausted.

For wells operated on leased lands, depreciation of the first kind is more than fully covered in the census returns by the royalties paid by the operators and included in the reported expenses; but for wells operated on lands owned by the operators it is not covered by any item. While depreciation of the second kind is not included in the reports of any wells, it should be borne in mind that the operators did include expenditures for permanent improvements, betterments, and replacements made during the year, which may in part offset the depreciation in the equipment of wells.

**Salaries.**—Except as explained in the following paragraph, the amount of salaries shown includes all payments to officials, superintendents, managers, and salaried employees in general offices, as well as the payments to salaried employees at the wells.

**Administrative expenses of general offices.**—Occasionally a company operating oil and gas wells in more than one state or field reported the expenses of its general office as a total and did not apportion these expenses among its different wells, or even among the different states or fields covered by its operations. States affected by returns of this kind for oil and gas operators were California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia. All the different fields, except those designated as "Other fields," were similarly affected. In order to show the total expenses for the wells of the states and

fields mentioned, it was necessary to distribute these administrative expenses among the states and fields by estimate. It was not thought desirable, however, to include under the heading of "Salaries" the salary payments thus distributed, since the number of employees of general offices to whom these salaries were paid could not be conveniently distributed by states and fields. Accordingly, the distribution was made as follows: The total expenses of each general office were apportioned as a single item among the wells of that company in the proportion which the total of the expenses separately reported for each well bore to the aggregate for all wells of the company, and the amount so assigned to each well was included in the item "Sundries," under "Miscellaneous expenses." Consequently, the total amount of salaries appearing as such in the statistics for the several states and fields mentioned, is slightly less than it should be, while the total for miscellaneous expenses is correspondingly exaggerated. These apportioned items are relatively small, however, so that the statistics for each state and field are approximately correct. In the totals for the United States, the number of general office employees, their salaries, and other general office expenditures are included under the proper heads.

This method of distributing the expenses of these general administrative offices necessarily affects somewhat the percentage distribution of the total expenses by specific items in the states and fields involved. The absolute amount of these administrative expenses in most cases was so small, however, that the variations in the percentages were slight; and although these percentages are not entirely accurate, they are of sufficient value to justify their inclusion in the general tables.

The same method of distributing administrative expenses among the fields and states was also employed in compiling those tables in which enterprises were divided into various classes. Thus, in the classes "Production only" and "Production and drilling of new wells," these administrative expenses are included in "Miscellane-

ous expenses," and they have been similarly treated in the tables which classify the industry according to the principal product.

**Wages.**—Small operators usually find it possible to dispense with the services of regular wage earners by hiring an independent mechanic for a few hours during the week. There is a class of mechanics in the oil fields who make it a specialty to work by the job for a number of operators. In several tables the compensation of these part-time employees is included in the cost of contract work, while in others, where the data are given in greater detail, such compensation is shown as a separate item.

**Supplies.**—This item includes the cost of all supplies and materials used during the year in connection with the operation or drilling of wells, as follows: Lumber and timber used for new construction and repairs, derricks, trestles, and all other purposes iron and steel for blacksmithing, piping, casing, renewals and repairs of tools; water for boilers and other purposes; machinery supplies; etc. It also includes the cost of fuel, of power rented, and of purchased gas. In several tables the cost of purchased gas is included with supplies and materials, while in others, where the data are given in greater detail, this item is shown separately.

**Miscellaneous expenses.**—Except as already explained under "Administrative expenses of general offices," the figures for miscellaneous expenses include royalties and rent of wells, taxes, cost of contract work, rent of offices and buildings other than at wells, payments for use of patents, insurance, ordinary repairs to buildings and machinery, advertising, damages, traveling expenses, and all other sundry expenses.

**Primary horsepower.**—This item represents the total primary power generated by the enterprises reporting plus the amount of power rented from other concerns. It does not include the horsepower of electric motors run by current generated by the enterprises themselves the inclusion of which would obviously result in duplication.

# PART I.—THE INDUSTRY AS A WHOLE.

## GENERAL SUMMARY FOR THE UNITED STATES.

The Thirteenth Census is the first at which a general canvass of operators of petroleum and natural gas wells has been made. At the special census of mines and quarries for 1902, the Standard Oil Company supplied most of the information secured regarding this industry. "There were in all 7 schedules received from the company, which contained the statistics for 28,925 producers and 112,794 wells. In addition to the reports of the Standard Oil Company, there were 604 schedules received from 597 producers covering the operations of 5,877 wells. The 7 schedules from the Standard Oil Company covered 98 per cent of the producers and 95 per cent of the wells reported for the United States. Similar reports were made by the company for its production of natural gas, 4 schedules being received for 19 producers and 1,701

wells in Pennsylvania, New York, Ohio, and West Virginia, the producers forming 1 per cent and the wells 10.8 per cent of the total for the United States."<sup>1</sup>

The number of operators of petroleum and natural gas wells from whom individual reports were received in 1902, was 2,545.<sup>2</sup> On the other hand, the total number of operators from whom complete reports were secured for the year 1909 was 7,793.

**Summary for producing and nonproducing enterprises: 1909.**—Table 1 presents the general statistics for 1909 of operators in the petroleum and natural gas industry.

<sup>1</sup> Special Report of the Census: Mines and Quarries, 1902, page 20.

<sup>2</sup> Exclusive of the Standard Oil Company, but including 17 operators who reported wells operated by municipalities and eleemosynary institutions. Special Report on Mines and Quarries, page 64, Table 19.

**Table 1**

	PRODUCING AND NONPRODUCING ENTERPRISES: 1909			
	Total.	Producing enterprises.		Nonproducing enterprises.
		Production only.	Production and drilling of new wells.	
Number of operators.....	18,053	5,208	2,736	260
Persons engaged in industry.....	64,089	16,528	45,390	1,917
Proprietors and firm members.....	16,420	10,743	5,470	207
Number performing manual labor.....	2,174	1,532	593	19
Salaried officers of corporations, superintendents, and managers.....	3,329	798	2,274	189
Clerks and other subordinate salaried employees.....	3,058	592	2,210	70
Wage earners, Dec. 15, 1909, or nearest representative day.....	41,282	4,395	35,436	1,461
<b>Wells:</b>				
Completed Dec. 31, 1909.....	166,448	56,265	110,055	123
Drilled in 1909.....	15,612	1	15,411	200
Productive.....	13,183	1	13,076	107
Dry.....	2,429	1	2,355	93
Abandoned in 1909.....	5,872	1,401	4,470	1
<b>Land controlled, acres:</b>				
Net.....	13,809,939	1,083,213	11,611,625	1,115,101
Owned.....	762,276	207,184	479,084	76,008
Held under lease.....	13,047,663	876,029	11,132,541	1,039,093
Sublet.....	1,377,652	113,647	1,263,579	426
Gross.....	15,187,591	1,196,860	12,875,204	1,115,527
Primary horsepower.....	1,230,546	286,782	935,187	8,577
Capital.....	\$697,434,811	\$104,311,432	\$571,267,551	\$14,166,314
Expenses of operation and development.....	\$142,683,027	\$14,846,947	\$121,291,697	\$7,044,383
<b>Services:</b>				
Salaried officers of corporations, superintendents, and managers.....	\$5,039,379	\$700,557	\$3,905,303	\$191,155
Clerks and other subordinate salaried employees.....	\$2,419,200	\$389,723	\$1,840,075	\$25,543
Wage earners.....	\$28,094,033	\$2,873,827	\$24,217,823	\$1,002,383
Supplies, fuel, and rent of power.....	\$46,527,924	\$1,737,840	\$39,653,768	\$5,136,316
Purchased gas.....	\$9,888,877	\$4,248,706	\$5,640,171	.....
Miscellaneous.....	\$50,713,614	\$4,396,294	\$46,034,567	\$688,986
Royalties and rent of wells.....	\$21,347,500	\$2,356,683	\$18,026,137	\$84,680
Part-time work.....	\$1,038,366	\$623,222	\$412,424	\$2,720
Contract work.....	\$16,091,306	\$187,110	\$15,406,495	\$300,442
Rent of offices and other sundry expenses.....	\$12,326,442	\$1,229,279	\$11,289,501	\$321,144
<b>Products:</b>				
Total value.....	\$135,416,684	\$28,463,089	\$156,953,595	.....
<b>Petroleum—</b>				
Barrels (42 gals.).....	171,559,394	24,327,036	147,232,358	.....
Value at well.....	\$117,696,529	\$18,293,193	\$99,403,336	.....
<b>Natural gas—</b>				
M cubic feet.....	559,800,490	65,280,711	494,519,779	.....
Value at well.....	\$67,605,397	\$10,138,677	\$57,466,720	.....
<b>Average per operator:</b>				
Wells completed Dec. 31, 1909.....	21	11	40	(?)
Land controlled, gross acreage.....	1,886	230	4,706	4,290
Wage earners.....	5	1	13	6
Primary horsepower.....	153	55	342	33
Value of products.....	\$23,793	\$5,467	\$57,366	.....

<sup>1</sup> Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

<sup>2</sup> The following numbers which could not be distributed by classes are properly credited in the total: Persons engaged in industry, 254; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

<sup>3</sup> Includes \$7,689,514 which could not be distributed among the different classes.

<sup>4</sup> The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, \$242,364; clerks and other subordinate salaried employees, \$163,859; and contract work, \$107,259.

<sup>5</sup> Includes \$14,758, representing the value of minor products.

<sup>6</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.

<sup>7</sup> Less than 1.

The operators are classified according to character of operations, being grouped into the following classes: (1) Those whose activities were confined to the operation of producing wells; (2) those drilling new wells in addition to operating producing wells; (3) those whose operations had not reached the productive stage at the close of the census year, that is, whose wells were still in the course of construction. Statistics based on the same classification are presented in much greater detail in the last four general tables (Tables 49 to 52).

The number of operators of producing enterprises who made complete returns was 7,793. The total quantity of petroleum reported by these operators in 1909 was 171,559,394 barrels, valued at \$117,696,529. In addition to these statistics, some defective reports which showed only the quantity and value of products were received from a number of small operators. The compilations of the Bureau of the Census include only the totals for complete reports from actual producers; the United States Geological Survey included all reports, complete and incomplete, in its total and therefore reported, in its preliminary report on petroleum production,<sup>1</sup> 175,722,716 barrels, valued at \$119,760,450. The complete returns from operators accordingly comprised 97.6 per cent of the total quantity and 98.3 per cent of the total value of the output of petroleum wells.

The final statistics published by the United States Geological Survey, "Mineral Resources of the United States," do not give the figures obtained in cooperation with the Bureau of the Census, but present returns based upon correspondence with transportation companies. The production as reported by transportation companies was 182,134,274 barrels, valued at \$128,248,783. Thus it is seen that the two compilations of the United States Geological Survey, one of which was based on the schedules used by the Bureau of the Census and the other on information from an entirely different source, agree within 3.5 per cent, a close agreement in view of the fact that two independent lines of inquiry were pursued. The Survey's expert on petroleum production states, furthermore, that the statistics received from the transportation companies contain a certain amount of duplication between pipe line runs and railroad shipments.<sup>1</sup>

The quantity of natural gas shown in the preceding table is not entirely comparable with the totals obtained by the United States Geological Survey; the difference arises from the fact that the latter included returns from all distributing companies, whereas the canvass by the Bureau of the Census was confined to producing companies, including only such distributing companies as were at the same time engaged in the operation of natural gas wells. The total quantity of natural gas shown in the preceding table amounts to

559,800,490,000 cubic feet, but this quantity includes a duplication due to purchases of gas by some gas producers from others. The net quantity obtained by eliminating this duplication amounts to 431,852,530,000 cubic feet, valued at \$57,716,520. The United States Geological Survey reported 480,706,174,000 cubic feet, valued at \$63,206,941.

Table 1 shows that in addition to the 7,793 operators of producing enterprises in 1909, there were 260 operators who reported no products. Some of these operators reported their wells completed but not yet in operation; in other cases the wells drilled during the year were dry. No records were obtained for the wells still unfinished on December 31, 1909. Although these operators of nonproducing enterprises constituted only 3.2 per cent of the total number and drilled only 200 wells, or 1.3 per cent of the total number of wells drilled in 1909, their holdings of oil and gas land amounted to more than a million acres, or 7.3 per cent of the aggregate gross acreage, and their total expenses for the year were \$7,044,383, or 4.9 per cent of the aggregate expenses for the entire industry.

Table 2 gives the percentage distribution of the important items contained in Table 1, by character of operations.

	PER CENT OF TOTAL FOR ALL ENTERPRISES.		
	Producing enterprises.		Non-producing enterprises.
	Production only.	Production and drilling of new wells.	
Wells:			
Completed Dec. 31, 1909.....	33.8	66.1	0.1
Drilled in 1909.....		98.7	1.3
Land controlled, gross acreage.....	7.9	84.8	7.3
Wage earners.....	10.6	85.8	3.5
Primary horsepower.....	23.3	76.0	0.7
Products (quantity):			
Petroleum.....	14.2	85.8	
Natural gas.....	11.7	88.3	

While, as shown in Table 1, about three-fifths of the total number of operators were engaged solely in the operation of their wells and did not expand their business by drilling any new wells, these reported only a little more than one-third of the total number of wells and only 7.9 per cent of the aggregate acreage. The larger operators combined the drilling of new wells with the operation of those already producing, and although these constituted little more than one-third of the total number, they controlled almost two-thirds of the completed wells and more than five-sixths of the aggregate acreage. The large scale of the activities of this second class of operators, as compared with the other two classes, is even more apparent from the averages per operator presented in Table 1.

**Comparative summary: 1909 and 1902.**—Table 3 presents for 1909 and 1902 the statistics regarding petroleum and natural gas production for which comparable figures are available.

<sup>1</sup> Petroleum Operators' Statistics of Production in 1909, by David T. Day, page 2.

	PRODUCING ENTERPRISES.		
	1909	1902	Per cent of increase.
Number of completed wells, Dec. 31.....	166,320	134,363	23. 8
Products:			
Total value.....	<sup>1</sup> \$175,527,807	\$102,034,590	72. 0
Petroleum, barrels.....	171,559,394	89,275,302	92. 2
Natural gas, M cubic feet.....	<sup>1</sup> 431,852,530	<sup>2</sup> 204,244,373	111. 4
Royalties:			
Amount.....	\$21,282,820	\$11,463,786	53. 7
Percentage of value of products.....	12. 1	11. 2	

<sup>1</sup> Exclusive of duplications resulting from the purchase of natural gas by operators of gas wells.

<sup>2</sup> Exclusive of the estimated production of wells operated by municipalities and eleemosynary institutions.

The total number of operators reported for 1902 was 31,489, whereas in 1909 only 7,793 were reported. This great disparity is due in part to duplications arising from the bookkeeping methods employed by the pipe lines by which, in many cases, every part owner of a well with his individual share of the value of the product was shown as an operator. The Thirteenth Census on the other hand, treated as a single unit an enterprise operated by several joint owners.

The total number of proprietors and firm members of producing enterprises in 1909 was 16,213. The addition to this figure of the 1,966 corporations and the 169 concerns under other forms of organization

in 1909 gives a total of 18,348, which is more nearly comparable with the 31,489 operators reported for 1902. After allowance is made for the difference in methods of reporting, however, it is still apparent that there was a decided decrease in the number of operators during the seven-year period. This fact, taken together with the large increase in the number of wells and in the total value of products since 1902, indicates that considerable concentration in the ownership and operation of petroleum and natural gas wells took place in the interval between the two enumerations. It is also noteworthy that the quantity of products increased at a greater rate between 1902 and 1909 than the value.

The ratio of royalties to value of products remained practically stationary. It must be borne in mind, however, that the royalties were not paid on the whole product, but only upon that part which was derived from leased land.

Summary for producing enterprises classified by principal product: 1909.—Table 4 presents a summary of the more important statistics for the producing enterprises in the petroleum and natural gas industry in 1909, classified according to the principal product. Table 5 gives the percentage distribution by branches of the industry of the important items contained in Table 4.

	PRODUCING ENTERPRISES: 1909			
	Total.	Principal product.		
		Petroleum.	Natural gas.	Unclassified.
Number of operators.....	7,793	6,653	1,207	52
Persons engaged in industry.....	<sup>2</sup> 62,172	40,245	13,690	7,983
Proprietors and firm members.....	16,213	13,064	3,061	88
Number performing manual labor.....	2,155	2,068	82	5
Salaried officers of corporations, superintendents, and managers.....	<sup>3</sup> 3,140	1,926	961	185
Clerks and other subordinate salaried employees.....	<sup>2</sup> 2,958	1,222	1,277	303
Wage earners, Dec. 15, 1909, or nearest representative day.....	39,831	24,033	8,391	7,407
Wells:				
Completed Dec. 31, 1909.....	166,320	129,422	18,271	18,627
Oil.....	146,625	128,771	2,434	15,420
Gas.....	19,695	651	15,837	3,207
Drilled in 1909.....	15,412	11,451	2,654	1,307
Land controlled, net acreage.....	12,694,838	4,049,790	4,567,190	4,077,858
Primary horsepower.....	1,221,969	730,664	151,363	339,942
Capital.....	<sup>3</sup> \$683,268,497	\$360,422,056	\$243,097,379	\$58,226,625
Expenses of operation and development.....	\$125,038,644	\$79,748,844	\$32,326,067	\$23,563,733
Services.....	<sup>4</sup> \$34,333,531	\$22,597,940	\$6,057,968	\$5,271,400
Salaried officers, superintendents, and managers.....	<sup>4</sup> \$4,848,224	\$2,775,808	\$1,319,470	\$510,582
Clerks and other subordinate salaried employees.....	<sup>4</sup> \$2,393,657	\$984,392	\$1,004,008	\$241,398
Wage earners.....	\$27,091,650	\$18,837,740	\$3,734,490	\$4,519,420
Supplies, fuel, and rent of power.....	\$51,280,485	\$29,114,627	\$14,261,414	\$7,964,444
Supplies.....	\$39,947,013	\$28,452,233	\$6,334,762	\$5,160,018
Fuel and rent of power.....	\$1,444,595	\$658,448	\$152,977	\$633,170
Cost of purchased gas.....	\$9,888,877	\$3,946	\$7,773,675	\$2,111,256
Miscellaneous.....	<sup>4</sup> \$50,024,628	\$28,036,277	\$12,006,655	\$10,387,889
Royalties and rent of wells.....	\$21,282,820	\$12,509,181	\$4,450,321	\$4,323,318
Taxes.....	<sup>4</sup> \$2,576,956	\$1,004,164	\$1,062,643	\$477,827
Contract work.....	<sup>5</sup> \$16,736,510	<sup>6</sup> \$9,386,820	<sup>6</sup> \$3,666,924	<sup>6</sup> \$3,581,507
Rent of offices and other sundry expenses.....	<sup>4</sup> \$9,428,312	\$5,142,112	\$2,526,797	\$2,005,237
Products, total value.....	<sup>7</sup> \$185,416,684	\$104,550,845	\$53,674,936	\$27,290,903
Petroleum:				
Barrels (42 gallons).....	171,559,394	162,581,408	791,529	8,186,457
Value at well.....	\$117,696,529	\$103,600,756	\$578,312	\$13,217,461
Natural gas:				
M cubic feet.....	7 559,600,490	16,577,637	394,775,787	148,447,066
Value at well.....	<sup>7</sup> \$67,605,397	\$557,640	\$52,674,560	\$14,073,197
Average per operator:				
Wells completed Dec. 31, 1909.....	21	19	15	358
Land controlled, acres.....	1,629	606	3,784	78,420
Wage earners.....	5	4	7	142
Primary horsepower.....	157	109	125	6,537
Value of products.....	\$23,793	\$15,644	\$44,387	\$524,825

<sup>1</sup> Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

<sup>2</sup> The following numbers, which could not be distributed by classes, are properly credited in the total: Persons engaged in industry, 254; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

<sup>3</sup> Includes \$21,522,437, which could not be distributed among the different classes.

<sup>4</sup> The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, \$242,364; clerks and other subordinate salaried employees, \$103,859; taxes, \$32,352; and contract work, \$107,259.

<sup>5</sup> The total includes \$1,035,646 paid to part-time employees, distributed as follows: Petroleum, \$856,636; natural gas, \$95,513; unclassified, \$83,497. See also note 4.

<sup>6</sup> Includes \$114,758 value of minor products.

<sup>7</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.

At prior censuses petroleum enterprises and natural gas enterprises were classified separately, each group constituting a distinct industry. In compiling the Thirteenth Census statistics, however, it seemed best to treat these two kinds of enterprises as branches of a single industry.

A complete segregation of petroleum wells from natural gas wells is not possible in all cases, because many petroleum wells incidently yield some natural gas, and vice versa; both petroleum and natural gas, therefore, appear as products of each kind of wells.

In many instances, moreover, both sorts of wells were operated under a single management. In such cases the operators usually made only one report which covered the operations of both classes of wells. Generally in such combined reports, one or the other of the products was decidedly greater in value and most of the operators could be classified according to the principal product of their wells.

The reports of a few operators in Pennsylvania and West Virginia, however, combined enterprises of each class in which the value of the petroleum and of the natural gas produced was about equal. In these cases it was impossible to apply the classification by principal product, and the statistics relating to these enterprises are, therefore, shown in the tables separately, under the heading "Unclassified."

Table 5

	PRODUCING ENTERPRISES— PERCENTAGE DISTRIBUTION, AC- CORDING TO PRINCIPAL PRODUCT: 1909.		
	Petroleum.	Natural gas.	Unclas- sified.
Number of completed wells, Dec. 31, 1909.....	77.8	11.0	11.2
Oil.....	87.8	1.7	10.5
Gas.....	3.3	80.4	16.3
Land controlled, acres.....	31.9	36.0	32.1
Wage earners.....	60.3	21.1	18.6
Primary horsepower.....	59.8	12.4	27.8
Products:			
Quantity—			
Petroleum.....	94.8	0.4	4.8
Natural gas.....	3.0	70.5	26.5
Value.....	56.4	28.9	14.7

#### GEOGRAPHICAL DISTRIBUTION.

The Bureau of the Census, for purposes of comparability, followed the classification of oil fields used by the United States Geological Survey in its report for the year next preceding the census. The following is the classification adopted:<sup>1</sup>

I. The Appalachian field, comprising the states of New York, Pennsylvania, West Virginia, Kentucky, and Tennessee, and the following counties in eastern Ohio: Ashtabula, Athens, Belmont, Carroll, Columbiana, Coshocton, Fairfield, Guernsey, Harrison, Hocking, Holmes, Jackson, Jefferson, Knox, Licking, Lorraine, Monroe, Morgan, Mahoning, Muskingum, Noble,

<sup>1</sup> The Survey makes no classification of gas fields, giving figures for this product by states only; but the Bureau of the Census uses, for regions producing gas only, the same classification adopted for oil fields, in so far as these two classifications correspond. In some cases counties reported gas production without any oil production, and such counties were here added to the Survey's classification of fields.

The 52 operators who could not be classified, although constituting less than 1 per cent of the total number, controlled 32.1 per cent of the total acreage and 11.2 per cent of the total number of completed wells, averaging 78,420 acres of land and 358 wells each. The average value of products per operator in this group exceeded half a million dollars, the total value of products comprising 14.7 per cent of the aggregate for the industry. It is apparent, therefore, that these 52 unclassified operators were doing business on a very large scale, whereas the operators included under the classified branches of the industry were more nearly representative of the prevailing type of operations.

Of the total quantity of petroleum produced by the enterprises in the industry in 1909, 94.8 per cent was returned by the enterprises in the petroleum branch, while 70.5 per cent of the quantity of natural gas produced was reported by the natural gas branch of the industry. Although the production of petroleum and natural gas included in the reports for the separate branches of the industry is somewhat less than the total production, it constitutes nevertheless a sufficiently large proportion of the total to be representative in character.

The total value of all the products of the industry in 1909 was \$185,416,684. Of this total, \$9,888,877 represented the cost of gas purchased by some operators from others within the industry; deducting this duplication, the net value of products was \$175,527,807, of which the petroleum was valued at \$117,696,529, the natural gas at \$57,716,520, and the minor products at \$114,758.

Five-sixths of the operators were in the petroleum branch of the industry and these controlled more than three-fourths of the completed wells. A large number of the petroleum enterprises were unimportant, however, as shown in Table 4, the average acreage, number of wage earners, and value of products per operator being much smaller for that branch than for the natural gas branch or for the unclassified enterprises.

Perry, Richland, Stark, Summit, Trumbull, Tuscarawas, Vinton, and Washington.

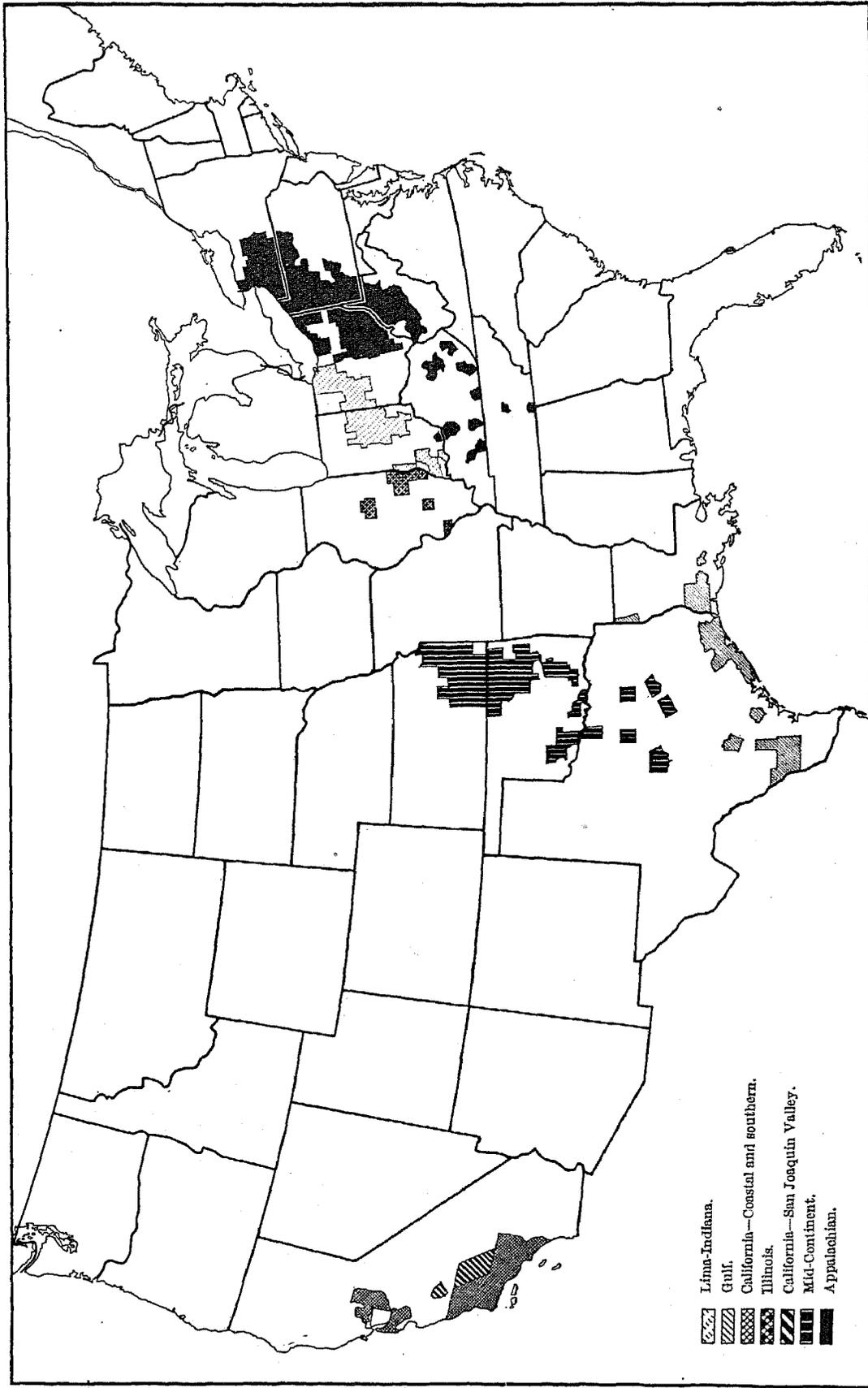
II. The Lima-Indiana field, comprising the state of Indiana and the following counties of Ohio: Allen, Auglaize, Darke, Hancock, Hardin, Henry, Logan, Lucas, Mercer, Ottawa, Paulding, Sandusky, Seneca, Shelby, Van Wert, Wood, and Wyandot.

III.—The Illinois field, comprising the state of Illinois.

IV.—The Mid-Continent field, comprising the states of Kansas and Oklahoma, and the following counties in Texas: Anderson, Brown, Clay, Coleman, Dallas, McLennan, Navarro, and Sabine.

V.—The Gulf field, comprising the state of Louisiana and the following counties in Texas: Bexar, Brazoria, De Witt, Duval, Gonzales, Hardin, Harris, Jefferson, Liberty, McMullen, Matagorda, Starr, and Walker.

PETROLEUM AND NATURAL GAS FIELDS: 1909.



VI.—The Coastal and southern California field, comprising the following counties in California: Alameda, Humboldt, Los Angeles, Monterey, Orange, Ventura, Santa Barbara, San Luis Obispo, San Mateo, and Santa Clara.

VII.—The San Joaquin Valley field, comprising Fresno, Kern, Kings, Mono, Sacramento, San Bernardino, San Joaquin, Solano, and Tulare counties, California.

VIII.—All other fields.

The boundaries of these fields are indicated on the map on the preceding page.

Summary, by fields: 1909.—Table 6 summarizes the persons engaged in industry, capital, expenses of operation and development, value of products, etc., for the producing oil and gas enterprises for 1909 by fields. More detailed figures are presented in the general tables at the end of this report.

Table 6

FIELD.	PRODUCING ENTERPRISES: 1909									
	Number of operators.	Number of completed wells Dec. 31, 1909.	Persons engaged in industry.				Total primary horse-power.	Capital.	Expenses of operation and development.	Total value of products.
			Proprietors and firm members.		Salaried employees.	Wage earners, Dec. 15, 1909, or nearest representative day.				
			Total.	Number performing manual labor.						
United States.....	17,793	166,320	16,213	2,155	6,128	39,831	1,221,969	\$683,268,497	\$135,638,644	\$185,416,684
Appalachian.....	4,829	109,685	10,752	1,816	2,722	20,337	918,727	344,007,846	68,498,187	97,764,641
Lima-Indiana.....	1,275	23,132	3,532	216	474	1,975	57,691	27,934,429	4,350,494	6,027,776
Illinois.....	323	10,918	817	22	312	4,059	40,615	34,366,518	13,476,053	18,895,815
Mid-Continent.....	994	16,689	769	44	1,156	4,730	101,352	102,990,290	18,350,832	26,058,280
Gulf.....	128	1,351	198	39	217	1,566	23,992	16,692,316	5,039,888	6,877,591
California:										
Coastal and southern.....	144	1,568	83	13	265	1,738	18,425	32,684,916	5,800,602	7,009,700
San Joaquin Valley.....	198	2,748	30	-----	666	5,269	58,164	113,799,314	19,409,485	22,300,635
Other fields <sup>5</sup> .....	51	229	32	5	32	157	3,003	3,103,354	704,103	481,946

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields.

<sup>2</sup> Includes 254 salaried employees who could not be distributed by fields.

<sup>3</sup> Includes \$7,689,514 which could not be distributed by fields.

<sup>4</sup> Includes a duplication of \$9,888,877 resulting from the purchase of natural gas by operators of gas wells.

<sup>5</sup> Includes one operator in Tennessee, in order to avoid disclosing individual operations.

The Appalachian field ranked far in advance of any other field, reporting 109,685 wells, or 65.9 per cent of the total number; 20,337 wage earners, or 51.1 per cent of the total number; and products valued at \$97,764,641, or 52.7 per cent of the gross value of products. The Lima-Indiana field ranked second in number of wells, with the Mid-Continent field third, while in number of wage earners the San Joaquin Valley field was second in rank, the Mid-Continent field being third. The Illinois field ranked fourth in both respects. The number of wells in the United States as a whole, was much greater than the number of wage earners, many of the proprietors themselves performing manual labor, and a single person often being able to attend to several contiguous wells. The two California fields and the Gulf field were the only ones in which the number of wage earners exceeded the number of wells.

Well record, by fields and states: 1909.—Table 7 gives a classification of all wells controlled by producing enterprises according to character of product, by fields and by states, for 1909.

The total number of productive petroleum and gas wells drilled in 1909 for which complete reports were obtained directly from the operators was 13,076. In addition, defective reports were received for 99 such wells. The returns received from other sources by the United States Geological Survey showed for the same year 14,923 producing wells drilled. The census returns thus show 1,847, or 12.4 per cent, fewer wells than the Geological Survey. Bearing in mind that

the returns as to the quantity of oil received from the same operators were 3.5 per cent short of the quantity reported to the United States Geological Survey by the transportation companies, and that the latter amount admittedly includes some duplications, it is probable that the number of wells reported by the same agencies may likewise be overstated. The greater difference between the two reports in the matter of number of wells is doubtless due in part to duplications arising from the joint ownership of the same wells by several proprietors, each of whom had an individual account with the pipe line or railroad company. In preparing the original census reports for tabulation, a number of cases were discovered in which reports had been made by each of several joint owners of the same undivided enterprises; such partial returns were consolidated into one report covering the operations of the entire enterprise, thus eliminating a number of duplications. Since the Survey obtained its information through a secondary source, however, such duplications could not be easily detected.

The total number of active wells on December 31, 1909, for which complete reports were received from operators was 166,320, of which 146,625 were classified as petroleum wells and 19,695 as gas wells. Pennsylvania had the largest number of completed wells, reporting more than one-third of the total. Ohio ranked second in this respect.

Of the total number of active wells, 13,076 were drilled during 1909. In addition, 2,336 dry wells were drilled during the year—that is, 15.2 per cent of the

total wells drilled during the year were reported as dry. More petroleum wells were drilled in Oklahoma than in any other state, though Illinois ranked close behind, with Pennsylvania third. These three states reported

more than half the total number of petroleum wells drilled. Pennsylvania led in the number of gas wells drilled, the other states of importance being West Virginia, Ohio, and Kansas.

**Table 7**

PRODUCING ENTERPRISES: 1909

FIELD AND STATE.	Number of wells drilled in 1909.					Number of wells abandoned in 1909.			Number of completed wells, Dec. 31, 1909.		
	Total.	Producing oil alone.	Producing gas alone.	Producing both oil and gas.	Dry.	Total.	Oil.	Gas.	Total.	Oil.	Gas.
<b>United States.....</b>	<b>15,412</b>	<b>7,401</b>	<b>2,441</b>	<b>3,234</b>	<b>2,336</b>	<b>5,871</b>	<b>4,837</b>	<b>1,034</b>	<b>166,320</b>	<b>146,625</b>	<b>19,695</b>
<b>FIELDS.</b>											
Appalachian.....	7,740	2,945	1,725	1,942	1,128	2,573	2,089	484	169,656	94,799	14,887
Lima-Indiana.....	744	233	167	203	141	2,258	1,999	259	23,132	29,743	2,389
Illinois.....	2,537	1,580	58	515	384	205	170	35	10,918	10,689	229
Mid-Continent.....	3,047	1,883	450	284	430	581	328	253	16,989	14,701	1,988
Gulf.....	544	308	17	49	170	173	173	.....	1,351	1,290	61
California-Coastal and southern.....	111	54	.....	49	8	41	39	2	1,568	1,555	13
California-San Joaquin Valley.....	597	382	.....	189	26	30	30	.....	2,748	2,728	20
Other fields.....	92	16	24	3	49	10	9	1	228	120	108
<b>STATES.</b>											
Arkansas.....	14	.....	13	.....	1	1	.....	1	62	.....	62
California.....	708	436	.....	238	24	71	69	2	4,316	4,283	33
Colorado.....	39	8	.....	3	28	9	9	.....	76	75	1
Illinois.....	2,537	1,580	58	515	384	205	170	35	10,918	10,689	229
Indiana.....	382	101	158	33	90	1,762	1,526	236	10,373	8,130	2,243
Kansas.....	597	33	369	5	190	349	124	225	3,402	1,794	1,648
Kentucky.....	143	30	19	38	56	32	32	.....	1,109	950	159
Louisiana.....	112	53	17	12	30	38	38	.....	246	197	59
Michigan.....	.....	.....	.....	.....	.....	.....	.....	.....	21	21	.....
Missouri.....	24	2	6	.....	16	.....	.....	.....	39	9	30
New York.....	450	140	51	240	19	73	64	9	11,342	10,696	646
North Dakota.....	6	.....	2	.....	3	.....	.....	.....	6	.....	6
Ohio.....	2,391	868	413	571	539	1,436	1,276	160	35,067	32,408	2,659
Oklahoma.....	2,203	1,680	75	262	186	155	132	23	12,113	11,798	315
Pennsylvania.....	3,344	1,298	668	1,029	349	863	592	271	59,780	51,035	8,745
South Dakota.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3
Tennessee.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Texas.....	679	425	6	54	194	212	207	5	2,279	2,252	27
West Virginia.....	1,774	741	583	234	216	605	598	67	15,146	12,323	2,823
Wyoming.....	10	6	3	.....	1	.....	.....	.....	21	15	6

The number of wells abandoned during the same year was 5,871, three-tenths of which were in Indiana. This state and the field of which it comprised a part,

constituted the only section in which the number of wells abandoned in 1909 exceeded the number of new producing wells drilled.

**PERSONS ENGAGED IN THE INDUSTRY.**

**Occupational status.**—Table 8 presents a complete summary for the persons engaged in each branch of the petroleum and natural gas industry in 1909, classified according to the character of the operations in which the operator reporting was engaged. The number of those employees working in central adminis-

trative offices of operators who conducted enterprises in more than one state or field is distributed by character of employment in the aggregate, but not for the various subordinate groups. For this reason the percentage distribution according to occupational status is shown only for the aggregate number.

**Table 8**

PERSONS ENGAGED IN PRODUCING AND NONPRODUCING ENTERPRISES: 1909

	Aggregate. <sup>1</sup>		Producing enterprises.								Non-producing enterprises.
	Number.	Per cent distribution.	Production only.				Production and drilling of new wells.				
			Total.	Petroleum.	Natural gas.	Unclassified.	Total.	Petroleum.	Natural gas.	Unclassified.	
<b>Total.....</b>	<b>64,089</b>	<b>100.0</b>	<b>16,528</b>	<b>13,126</b>	<b>3,310</b>	<b>92</b>	<b>45,390</b>	<b>27,119</b>	<b>10,380</b>	<b>7,891</b>	<b>1,917</b>
Proprietors and officials.....	19,749	30.8	11,541	9,381	2,115	42	7,744	5,606	1,907	231	396
Proprietors and firm members.....	16,420	25.6	10,743	8,846	1,862	35	5,470	4,218	1,199	53	207
Number performing manual labor.....	2,174	3.4	1,562	1,507	52	3	593	561	30	2	19
Salaried officers of corporations.....	1,220	1.9	318	186	131	1	807	455	287	65	67
Superintendents and managers.....	2,109	3.3	480	352	122	6	1,467	933	421	113	122
Clerks and other subordinate salaried employees.....	3,058	4.8	592	275	313	4	2,210	947	964	299	70
Wage earners.....	41,282	64.4	4,395	3,467	882	46	35,436	20,560	7,509	7,361	1,451
Engineers, firemen, mechanics, etc.....	28,085	43.8	3,261	3,098	120	43	23,802	16,055	2,682	5,665	1,022
All other wage earners <sup>2</sup> .....	13,197	20.6	1,134	369	762	3	11,634	4,511	5,427	1,696	429

<sup>1</sup> Includes 254 persons—28 salaried officials, 40 superintendents and managers, and 186 clerks and other subordinate salaried employees—that could not be distributed among the various classes.  
<sup>2</sup> "All other wage earners" includes, in the various classes, 15 boys under 16 years of age.

Of the 64,089 persons reported as engaged in the industry, 25.6 per cent were proprietors and firm members, 10 per cent salaried employees, and 64.4 per cent wage earners. Approximately one-fourth of the total number of persons engaged in the industry were employed in the branch confined to production only, while about seven-tenths of them were reported from enterprises engaged in both production and the drilling of new wells.

Among the 16,420 proprietors and firm members, 2,174, or 13.2 per cent, reported that they were engaged in manual labor; and of these, 95.1 per cent were in the petroleum branch of the industry. A larger proportion of the proprietors and firm members of enterprises confined to production only engaged in manual labor than of the proprietors of enterprises which also drilled new wells.

Of the persons engaged in "production only," about one-fourth were wage earners; whereas wage earners constituted more than three-fourths of the persons engaged in the "production and drilling of new wells." In enterprises whose principal product was petroleum, engineers, firemen, mechanics, etc., made up the great majority of the wage earners, but in the production of natural gas this group was decidedly outnumbered by "all other wage earners."

Salaried employees.—Table 9 shows the number of salaried employees, classified according to grade for all enterprises, both producing and nonproducing, in 1909, and their total salaries. The number of salaried employees, 6,387, constituted only 10 per cent of the total number of persons engaged in the industry.

CLASS.	SALARIED EMPLOYEES, ALL ENTERPRISES: 1909	
	Number.	Salaries.
Total.....	6,387	\$7,458,579
Officers of corporations.....	1,220	1,985,443
Superintendents and managers.....	2,109	3,053,936
Clerks and other subordinate salaried employees.....	3,058	2,419,200

Wage earners.—The number of wage earners directly employed by operators of producing and nonproducing enterprises falls considerably short of the total number of persons performing manual labor in connection with the oil and gas industry. The reason for this is in the first place that the drilling of new wells is done very largely by contractors whose employees can not be reported accurately by the operators. The total amount paid for contract work in 1909 was \$16,001,306, as compared with \$28,094,033 paid to wage earners employed directly by the operators. Furthermore, the operation of an oil or gas well does not in all cases require the constant attendance of a regular employee. The small operator finds it possible to dispense with the services of regular wage earners by hiring an independent mechanic for a few hours during the week, and to meet this demand many mechanics in oil fields specialize in working by the job for a number of operators. The total amount paid by operators of oil and gas wells to part-time employees in 1909 was \$1,038,366.

Many operators, moreover, run their wells without hired labor of any kind, performing the manual labor themselves.

Kind of labor used.—Table 10 shows the number of operators of producing wells for 1909, classified according to the kind of labor used. Statistics for the operators who reported either petroleum wells only or natural gas wells only are given in greater detail in tables in Part IV.

Table 10

STATE AND CHARACTER OF OPERATIONS.	PRODUCING ENTERPRISES: 1909				
	Total.	Em- ploying regular wage earn- ers.	Em- ploying part- time labor.	Em- ploy- ing con- tract labor only.	Em- ploy- ing no hired labor.
United States.....	17,793	3,632	2,457	448	1,405
Production only.....	5,206	1,726	1,942	157	1,381
Production and drilling of new wells.....	2,736	1,906	515	291	24
Arkansas.....	3	1	2		
Production only.....	1	1			
Production and drilling of new wells.....	2		2		
California.....	342	287	13	31	11
Production only.....	127	76	13	27	11
Production and drilling of new wells.....	215	211		4	
Colorado.....	23	9	8	3	3
Production only.....	17	4	7	3	3
Production and drilling of new wells.....	6	5	1		
Illinois.....	323	281	31	6	5
Production only.....	130	104	20	1	5
Production and drilling of new wells.....	193	177	11	5	
Indiana.....	644	185	77	46	336
Production only.....	569	141	65	28	335
Production and drilling of new wells.....	75	44	12	18	1
Kansas.....	217	120	63	15	19
Production only.....	143	75	48	2	18
Production and drilling of new wells.....	74	45	15	13	1
Kentucky.....	85	39	36	6	4
Production only.....	55	19	27	5	4
Production and drilling of new wells.....	30	20	9	1	
Louisiana.....	31	22	2	4	3
Production only.....	10	6	1	1	2
Production and drilling of new wells.....	21	16	1	3	1
Michigan.....	1	1			
Production only.....	1	1			
Missouri.....	12		6	3	3
Production only.....	7		5		2
Production and drilling of new wells.....	5		1	3	1
New York.....	708	154	426	34	94
Production only.....	559	92	368	5	94
Production and drilling of new wells.....	149	62	58	29	
North Dakota.....	1	1			
Production and drilling of new wells.....	1	1			
Ohio.....	1,195	547	497	46	105
Production only.....	786	260	404	18	104
Production and drilling of new wells.....	409	287	93	28	1
Oklahoma.....	711	584	91	17	19
Production only.....	323	246	56	3	18
Production and drilling of new wells.....	388	338	35	14	1
Pennsylvania.....	3,030	994	1,065	205	766
Production only.....	2,147	531	824	43	749
Production and drilling of new wells.....	883	463	241	162	17
South Dakota.....	3				3
Production only.....	3				3
Tennessee.....	1		1		
Production only.....	1		1		
Texas.....	163	127	8	21	7
Production only.....	70	40	4	20	6
Production and drilling of new wells.....	93	87	4	1	1
West Virginia.....	442	274	130	11	27
Production only.....	256	129	99	1	27
Production and drilling of new wells.....	186	145	31	10	
Wyoming.....	7	6	1		
Production only.....	1	1			
Production and drilling of new wells.....	6	5	1		

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more states. These duplications have not been eliminated from the figures for the different classes.

Less than one-half of the total number of operators employed regular wage earners, though more than two-thirds of the operators who were engaged in drilling new wells in conjunction with the operation of old wells employed regular wage earners. In all but three of the important states shown, this constituted the largest single class of operators. Slightly over one-sixth of the operators employed no hired labor whatever, almost four-fifths of these being reported from Pennsylvania and Indiana. More than half the operators in the latter state employed no hired labor. This class was practically confined to producing properties where no new wells were drilled during the census year. The operators employing part-time labor were engaged chiefly in production on a small scale, as has already been stated. Four-fifths of these were reported from Pennsylvania, Ohio, and New York. In the latter state this class constituted more than half the total number of operators; and in Pennsylvania it was also the largest class, comprising more than one-third of the total number of operators.

**Wage earners employed, by months.**<sup>1</sup>—Table 11 gives the number of wage earners employed on the 15th day of each month during the year 1909, in the United States, separately for producing and nonproducing enterprises, and by fields and states for all producing enterprises. The wage earners connected with nonproducing enterprises were mostly employed in California.

<sup>1</sup> The table gives a total of 40,710 wage earners employed December 15, 1909, while Table 1 gives a total of 41,282 wage earners employed on that date or the nearest representative day. The difference of 572, or less than 1.5 per cent, is due to the fact that these figures were obtained from two separate inquiries on the census schedule. The first of these inquiries asked for the specific classes of wage earners employed on December 15, or the nearest representative day. If the well was not operated on December 15, or was running under abnormal conditions, then in answer to this inquiry the operator reported the number of men employed on the nearest day when conditions were normal. The second inquiry asked for the number of wage earners on the 15th day of each month, which might or might not be a normal day. In all other tables in this section giving statistics of wage earners the number obtained from the inquiry referring to December 15, or the nearest representative day, has been used, since it is considered that this number more closely approximates the true total of wage earners depending upon the industry for a livelihood.

FIELD AND STATE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
<b>UNITED STATES.....</b>	34,714	34,124	34,602	35,614	36,620	37,566	38,262	38,754	39,023	40,156	41,099	40,710
Producing enterprises.....	34,162	33,521	33,920	34,868	35,854	36,728	37,368	37,849	38,098	39,121	39,932	39,502
Nonproducing enterprises.....	552	603	682	746	766	838	894	905	925	1,035	1,167	1,208
<b>Producing enterprises by fields and states:</b>												
<b>FIELDS.</b>												
Appalachian.....	16,961	16,386	16,687	17,263	18,027	18,859	19,192	19,981	20,032	20,443	21,446	20,276
Lima-Indiana.....	2,040	2,064	2,022	2,020	2,025	1,978	1,916	1,955	1,981	1,962	1,868	1,942
Illinois.....	3,680	3,634	3,625	3,702	3,749	3,847	3,879	3,821	3,692	3,834	3,833	3,937
Mid-Continent.....	4,089	4,004	4,022	4,049	4,099	4,426	4,458	4,210	4,301	4,493	4,404	4,705
Gulf.....	1,610	1,644	1,528	1,572	1,616	1,480	1,512	1,487	1,465	1,515	1,427	1,513
California—Coastal and southern.....	1,493	1,461	1,493	1,662	1,610	1,628	1,610	1,591	1,613	1,672	1,671	1,732
California—San Joaquin Valley.....	4,164	4,198	4,417	4,560	4,589	4,364	4,045	4,669	4,558	5,042	5,125	5,239
Other fields.....	125	130	126	140	139	146	150	138	156	160	138	138
<b>STATES.</b>												
California.....	5,957	5,659	5,910	6,122	6,199	5,992	6,261	6,257	6,471	6,714	6,796	6,971
Colorado.....	110	112	109	116	117	117	121	120	127	124	122	122
Illinois.....	3,680	3,634	3,625	3,702	3,749	3,847	3,879	3,821	3,692	3,834	3,833	3,937
Indiana.....	1,419	1,452	1,396	1,394	1,403	1,357	1,303	1,327	1,357	1,334	1,245	1,325
Kansas.....	932	843	839	904	954	1,159	1,158	967	966	1,130	1,162	1,283
Kentucky.....	225	218	204	203	196	212	219	270	254	266	253	206
Louisiana.....	657	653	537	606	616	557	542	531	500	532	465	488
New York.....	346	334	341	338	384	382	383	370	369	382	374	370
Ohio.....	4,827	4,589	4,731	4,927	5,110	5,207	5,378	5,663	5,730	5,859	6,303	5,865
Oklahoma.....	2,737	2,760	2,806	2,772	2,774	2,864	2,880	2,851	2,947	3,007	2,929	3,059
Pennsylvania.....	5,993	5,705	5,761	6,004	6,369	6,853	6,964	7,234	7,197	7,510	7,738	7,365
Texas.....	1,373	1,392	1,368	1,339	1,371	1,326	1,390	1,348	1,344	1,339	1,275	1,358
West Virginia.....	6,191	6,152	6,276	6,417	6,590	6,826	6,861	7,072	7,106	7,054	7,401	7,087
All other states <sup>1</sup> .....	15	15	17	24	22	29	29	18	29	36	16	16

<sup>1</sup> Includes operators distributed as follows: Arkansas, 3; Michigan, 1; North Dakota, 1; and Wyoming, 7.

In 1909 the maximum number of wage earners was reported for November, and the minimum for February. Most of the fields and states showed the same gradual advance throughout the year until the maximum was reached in November or December. In the

Lima-Indiana, and in the Gulf fields, the maximum number was reported for February and the minimum for November. The states in which a decline was reported were Indiana, Louisiana, Texas, Kentucky, and New York.

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## CHARACTER OF ORGANIZATION.

Classification of operators by character of organization.—Table 12 presents the principal data for 1909 for operators of producing petroleum and natural gas wells classified according to form of organization, by states.

Table 12

STATE AND CHARACTER OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909							
	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products
<b>United States.....</b>	<b>17,793</b>	<b>39,831</b>	<b>5</b>	<b>\$185,416,684</b>	<b>\$23,793</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	2,298	2,020	1	9,662,086	4,205	29.5	5.1	5.2
Firm.....	3,360	3,085	1	18,954,985	5,641	43.1	7.7	10.2
Corporation.....	1,966	32,636	17	149,358,493	75,971	25.2	81.9	80.6
Other.....	169	2,090	12	7,441,115	44,030	2.2	5.2	4.0
<b>California.....</b>	<b>339</b>	<b>7,007</b>	<b>21</b>	<b>29,310,335</b>	<b>86,461</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	49	166	3	943,586	19,256	14.5	2.4	3.2
Firm.....	27	90	3	353,308	13,271	8.0	1.3	1.2
Corporation.....	263	6,751	26	28,008,461	106,496	77.6	96.3	95.6
<b>Colorado.....</b>	<b>23</b>	<b>126</b>	<b>5</b>	<b>317,680</b>	<b>13,812</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Unincorporated.....	12	5	( <sup>4</sup> )	20,456	1,705	52.2	4.0	6.4
Corporation.....	11	121	11	297,224	27,020	47.8	96.0	93.6
<b>Illinois.....</b>	<b>323</b>	<b>4,059</b>	<b>13</b>	<b>18,695,815</b>	<b>58,501</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	38	98	3	360,692	9,492	11.8	2.4	1.9
Firm.....	189	360	2	3,326,717	17,602	58.5	8.9	17.6
Corporation.....	88	3,477	40	13,709,342	155,788	27.2	85.7	72.6
Other.....	8	124	16	1,499,064	187,383	2.5	3.1	7.9
<b>Indiana.....</b>	<b>644</b>	<b>1,345</b>	<b>2</b>	<b>3,224,619</b>	<b>5,007</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	246	87	( <sup>4</sup> )	263,875	1,073	38.2	6.5	8.2
Firm.....	126	117	1	423,291	3,359	19.6	8.7	13.1
Corporation.....	212	1,132	5	2,496,298	11,775	32.9	84.2	77.4
Other.....	60	9	( <sup>4</sup> )	41,155	686	9.3	0.7	1.3
<b>Kansas.....</b>	<b>217</b>	<b>1,302</b>	<b>6</b>	<b>6,681,780</b>	<b>30,792</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	34	19	1	115,745	3,404	15.7	1.5	1.7
Firm.....	41	25	1	213,766	5,214	18.9	1.9	3.2
Corporation.....	139	1,256	9	6,340,496	45,615	64.1	96.5	94.9
Other.....	3	2	1	11,773	3,924	1.4	0.2	0.2
<b>Kentucky.....</b>	<b>85</b>	<b>206</b>	<b>2</b>	<b>892,281</b>	<b>10,497</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	8	1	( <sup>4</sup> )	8,533	1,104	9.4	0.5	1.0
Firm.....	37	35	1	118,221	3,195	43.5	17.0	13.2
Corporation.....	40	170	4	765,227	19,131	47.1	82.5	85.8
<b>Louisiana.....</b>	<b>31</b>	<b>523</b>	<b>17</b>	<b>2,177,986</b>	<b>70,258</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	3	6	2	24,094	8,031	9.7	1.1	1.1
Firm.....	3	6	2	31,357	10,452	9.7	1.1	1.4
Corporation.....	25	517	21	2,122,535	84,901	80.6	98.9	97.5
<b>New York.....</b>	<b>708</b>	<b>374</b>	<b>1</b>	<b>2,668,996</b>	<b>3,770</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	227	74	( <sup>4</sup> )	534,507	2,355	32.1	19.8	20.0
Firm.....	423	140	( <sup>4</sup> )	1,190,238	2,814	59.7	37.4	44.6
Corporation.....	49	151	3	921,470	18,806	6.9	40.4	34.5
Other.....	9	9	1	22,781	2,531	1.3	2.4	0.9
<b>Ohio.....</b>	<b>1,188</b>	<b>5,897</b>	<b>5</b>	<b>29,620,959</b>	<b>24,933</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	303	309	1	1,275,171	4,208	25.5	5.2	4.3
Firm.....	578	587	1	3,236,242	5,599	48.7	10.0	10.9
Corporation.....	287	4,919	17	24,638,448	85,848	24.2	83.4	83.2
Other.....	20	82	4	471,098	23,554	1.7	1.4	1.6
<b>Oklahoma.....</b>	<b>711</b>	<b>3,066</b>	<b>4</b>	<b>17,685,092</b>	<b>24,874</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	85	220	3	1,165,510	13,712	12.0	7.2	6.6
Firm.....	131	258	2	1,614,074	12,321	18.4	8.3	9.1
Corporation.....	476	2,470	5	14,262,604	29,963	66.9	80.6	80.6
Other.....	19	120	6	642,904	33,837	2.7	3.9	3.6
<b>Pennsylvania.....</b>	<b>3,030</b>	<b>7,397</b>	<b>2</b>	<b>39,197,475</b>	<b>12,936</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	1,204	740	1	3,621,597	3,008	39.7	10.0	9.2
Firm.....	1,579	1,047	1	5,933,702	3,758	52.1	14.2	15.1
Corporation.....	207	4,591	22	26,581,488	128,413	6.8	62.1	67.8
Other.....	40	1,019	25	3,060,688	76,517	1.3	13.8	7.8
<b>Texas.....</b>	<b>163</b>	<b>1,405</b>	<b>9</b>	<b>6,391,313</b>	<b>39,210</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	42	174	4	635,898	15,140	25.8	12.4	9.9
Firm.....	59	160	3	793,710	13,453	36.2	11.4	13.4
Corporation.....	59	1,040	18	4,899,110	82,527	36.2	74.0	76.2
Other.....	3	31	10	92,595	30,865	1.8	2.2	1.4
<b>West Virginia.....</b>	<b>442</b>	<b>7,093</b>	<b>16</b>	<b>28,188,087</b>	<b>63,774</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	72	128	2	687,752	9,552	16.3	1.8	2.4
Firm.....	184	285	2	1,782,617	9,688	41.6	4.0	6.3
Corporation.....	175	6,010	34	24,190,745	135,233	39.6	84.7	85.8
Other.....	11	670	61	1,527,073	135,825	2.5	9.4	5.4
<b>All other states<sup>5</sup>.....</b>	<b>28</b>	<b>31</b>	<b>1</b>	<b>164,266</b>	<b>5,867</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Individual.....	8	8	1	5,712	714	28.6	3.5	3.5
Firm.....	3	3	1	3,504	1,163	10.7	2.1	2.1
Corporation.....	17	31	2	155,050	9,121	60.7	100.0	94.4

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more states.

<sup>2</sup> Includes a duplication of \$9,898,877 resulting from the purchase of natural gas by operators of gas wells.

<sup>3</sup> Includes one other form of organization.

<sup>4</sup> Less than one.

<sup>5</sup> Includes two other forms of organization.

<sup>6</sup> Includes operators distributed as follows: Arkansas, 3; Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Wyoming, 7.

Corporations constituted by far the most important group of operators of petroleum and natural gas wells. Although constituting only one-fourth of the total number of operators, the corporations contributed four-fifths of the total value of products and employed more than four-fifths of the total number of regular wage earners. In some of the principal oil and gas producing states the predominance of the corporate form of organization was still greater. In California, Colorado, Kansas, and Louisiana incorporated companies reported more than 90 per cent of the total value of products.

Incorporated companies as a whole represent large-scale operations, while individuals and firms represent operations on a smaller scale. The average value of products per operator in the United States amounted to \$75,971 for corporations, \$5,641 for firms, and \$4,205 for individuals. These averages varied somewhat in the different states, but in no state did the average per individual or firm reach \$20,000. The average number of wage earners per individual or firm for the United States was less than 1, while the average number of wage earners for incorporated companies was 17.

The group of 169 operators other than individuals, firms, and corporations, includes 62 concerns made up of some combination of individuals, firms, and corporations, operating jointly each with an undivided property interest in the wells, 53 cooperative associations, 51 estates, 2 churches, and 1 fraternal society. The total number of proprietors, whether individuals, partnerships, or corporations, in the 62 concerns above mentioned was 206, and the total value of their products was \$6,890,617. Of the 53 cooperative

associations, 52 were engaged in the operation of natural gas wells, 51 of these being in Indiana and 1 in Kentucky, and 1 association was engaged in petroleum production in Pennsylvania. Table 36, in Part III, gives a summary of the operations of the Indiana cooperative associations.

Table 13 presents the statistics of the nonproducing enterprises, by character of organization, for the United States and for the state of California.

STATE AND CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.		Per cent distribution.	
		Total.	Average per operator.	Number of operators.	Number of wage earners.
<b>UNITED STATES</b>					
All classes.....	260	1,451	6	100.0	100.0
Individual.....	15	74	5	5.8	5.1
Firm.....	36	166	5	13.8	11.4
Corporation.....	209	1,211	6	80.4	83.5
<b>California</b>					
All classes.....	168	1,152	7	100.0	100.0
Individual.....	4	16	4	2.4	1.4
Firm.....	10	131	13	6.0	11.4
Corporation.....	154	1,005	7	91.7	87.2
<b>All other states</b>					
All classes.....	92	299	3	100.0	100.0
Individual.....	11	58	5	12.0	19.4
Firm.....	26	35	1	28.3	11.7
Corporation.....	55	206	4	59.8	68.9

As appears from the preceding table, the corporate form of organization predominated in nonproducing enterprises. In the scale of operations, however, there was little difference between individuals, firms, and corporations. On the whole, the nonproducing enterprises were conducted in 1909 on a very small scale.

**LAND TENURE.**

Complete returns regarding the tenure of oil and gas lands were received from 7,289 operators of producing properties and from 245 operators of the properties which were not productive during the census year, no answers to this inquiry being received from 504 operators of properties on which producing wells were located nor from 15 operators of nonproducing properties. Statistics regarding acreage were therefore received from more than nine-tenths of the total number of operators.

**Acreage and form of tenure.**—Table 14 summarizes for 1909, the statistics for the acreage of land controlled by the 7,534 operators who made reports on this item, classified by character of enterprises, according to the form of tenure.

The total net holdings of operators of both producing and nonproducing properties amounted to 13,809,939 acres, of which 94.5 per cent was held by the operators under some form of lease. Two-thirds of the net acreage was located in the Appalachian field.

The Gulf field is the only one shown separately in which the net acreage of nonproducing properties exceeded that of the producing properties, the nonproducing land in this field constituting 64.1 per cent of

the total of such land for the United States. Almost all of the nonproducing land in the Gulf field was held under lease. Only 5.4 per cent of the producing acreage and 6.8 per cent of the nonproducing acreage was owned by the operators.

The acreage reported in the following table as sublet consisted very largely of land the oil rights of which were held by operators who had sublet the gas rights to other operators, or vice versa. In such cases the sublessees reported as held under lease this acreage to which they held only partial rights. In other words, the same land was reported twice, once by the operator controlling the gas rights, and once by the operator controlling oil rights. Moreover, some producers sublet to other operators portions of properties which they held under direct lease from the owners but made no subtraction of such sublet land in the report of their holdings, while the sublessees also reported the same land as held under lease by themselves. These cases obviously involved duplication, but no duplication is involved in cases where sublessees failed to report acreage, or where their holdings were not yet productive. The gross acreage reported as leased amounted to 14,425,315. In order to present a total approxi-

## MINES AND QUARRIES.

mately free from duplications the acreage reported as sublet was deducted from the gross total leased. The table shows the acreage actually reported, the total leased being the sum of the net leased acreage and of the sublet acreage, the gross total acreage being the sum of the land owned and the gross acreage leased.

In Tables 15, 17, and 18 of this section on land tenure the gross acreage reported is the figure used, for in the tables which classify the acreage by character of organization and by size of holdings, the holdings of oil rights and of gas rights upon the same tract of land are both properly included.

Table 14

FIELD AND CHARACTER OF ENTERPRISE.	ACREAGE CONTROLLED: 1909					
	Net acreage.			Sublet.	Gross acreage reported.	
	Total.	Owned.	Held under lease.		Total.	Held under lease.
United States .....	13,809,939	762,276	13,047,663	1,377,652	15,187,591	14,425,315
Producing .....	12,694,838	686,268	12,008,570	1,377,226	14,072,064	13,385,796
Nonproducing .....	1,115,101	78,008	1,039,093	426	1,115,527	1,039,519
Appalachian .....	9,230,791	400,783	8,830,008	515,123	9,745,914	9,345,131
Producing .....	9,206,885	400,208	8,806,677	515,123	9,722,008	9,321,800
Nonproducing .....	23,906	575	23,331		23,906	23,331
Lima—Indiana .....	524,187	48,997	475,190	86	524,273	475,276
Producing .....	520,889	48,997	471,892	86	520,975	471,978
Nonproducing .....	3,298		3,298		3,298	3,298
Illinois .....	405,235	10,513	394,722	30,063	435,298	424,785
Producing .....	396,135	10,513	385,622	30,063	426,198	415,685
Nonproducing .....	9,100		9,100		9,100	9,100
Mid-Continent .....	1,846,528	56,245	1,790,283	826,654	2,673,182	2,616,937
Producing .....	1,810,976	47,055	1,763,891	826,654	2,637,630	2,590,545
Nonproducing .....	35,552	9,160	26,392		35,552	26,392
Gulf .....	897,812	61,258	836,524	501	898,313	837,025
Producing .....	183,140	60,177	122,963	501	183,641	123,464
Nonproducing .....	714,672	1,111	713,561		714,672	713,561
California—Coastal and southern .....	141,842	61,772	79,570	1,398	142,740	80,968
Producing .....	82,344	29,751	52,593	1,218	83,562	53,811
Nonproducing .....	58,998	32,021	26,977	180	59,178	27,157
California—San Joaquin Valley .....	417,883	97,052	320,331	2,927	420,310	323,258
Producing .....	373,100	77,323	295,777	2,681	375,781	293,458
Nonproducing .....	44,283	19,729	24,554	246	44,529	24,800
Other fields <sup>1</sup> .....	346,661	25,626	321,035	900	347,561	321,935
Producing .....	121,369	12,214	109,155	900	122,269	110,055
Nonproducing .....	225,292	13,412	211,880		225,292	211,880

<sup>1</sup> Includes one operator in Tennessee, in order to avoid disclosing individual operations.

Land holdings, by character of organization.—Table 15 presents the figures for land controlled by producing enterprises in 1909, according to character of organization, by states.

Table 15

STATE.	GROSS ACREAGE: 1909 <sup>1</sup>								
	All classes.			Incorporated.			Unincorporated.		
	Aggregate.	Owned.	Held under lease.	Total.	Owned.	Held under lease.	Total.	Owned.	Held under lease.
United States .....	14,072,064	686,268	13,385,796	12,458,500	405,813	12,052,687	1,613,564	280,455	1,333,109
Arkansas .....	46,048	530	45,518	46,048	530	45,518			
California .....	459,343	107,074	352,269	453,183	103,309	349,874	6,160	3,765	2,395
Colorado .....	32,123	7,416	24,707	30,432	5,917	24,515	1,691	1,499	192
Illinois .....	426,188	10,513	415,685	371,883	9,054	362,829	54,315	1,459	52,856
Indiana .....	363,205	37,432	315,773	264,974	10,242	254,732	88,231	27,190	61,041
Kansas .....	539,115	14,365	524,750	514,243	8,531	505,712	24,872	5,834	19,038
Kentucky .....	289,236	2,034	287,202	268,048	742	267,306	21,188	1,292	10,896
Louisiana .....	96,331	17,336	78,995	95,847	16,886	78,961	484	450	34
Missouri .....	6,434	524	5,910	2,005	5	2,000	4,429	519	3,910
New York .....	225,078	50,243	175,835	136,283	6,984	129,299	89,795	43,259	46,536
Ohio .....	1,667,990	28,658	1,639,332	1,444,082	14,364	1,429,718	223,908	14,294	209,614
Oklahoma .....	1,777,386	17,529	1,759,857	1,677,428	10,305	1,667,123	99,958	7,224	92,734
Pennsylvania .....	2,851,803	308,540	2,543,263	2,181,910	149,023	2,032,887	669,893	159,517	510,376
Texas .....	408,439	58,032	350,407	379,257	50,949	328,308	29,182	7,083	22,099
West Virginia .....	4,854,671	22,298	4,832,373	4,555,213	15,228	4,539,985	299,458	7,070	292,388
Wyoming .....	6,150	3,230	2,920	6,150	3,230	2,920			
All other states <sup>2</sup> .....	31,514	514	31,000	31,514	514	31,000			

<sup>1</sup> Includes a duplication in the case of acreage sublet, which is shown in Table 16 by states.

<sup>2</sup> Includes operators distributed as follows: Michigan, 1; North Dakota, 1; Tennessee, 1.

This table shows that a very large proportion of the total reported acreage was held by incorporated enterprises. The proportion of leased land was greater for incorporated companies than for individuals and firms.

Table 16 shows the land sublet, by states, and this table may be used in connection with Table 15 to indicate in what states a possible duplication of figures for acreage occurs.

**Table 16**

STATE.	Acreage sublet: 1909	STATE.	Acreage sublet: 1909
United States .....	1,377,226	New York.....	3,575
California <sup>1</sup> .....	3,899	Ohio.....	10,914
Colorado.....	900	Oklahoma.....	658,148
Illinois.....	30,063	Pennsylvania.....	27,681
Kansas.....	36,909	Texas.....	132,083
Louisiana.....	15	West Virginia.....	407,039

<sup>1</sup> In addition to figures given in this table, California reported 426 acres of nonproducing land sublet.

**Concentration of control.**—Tables 17 and 18 present summaries for operators of nonproducing and producing enterprises, respectively, classified according to the total area held by each operator, by fields.

As can be seen from Table 18, the control of oil and gas lands is highly concentrated, two-thirds of all pro-

ducing land being held by the 24 operators, whose holdings exceeded 100,000 acres each.

**Table 17**

NUMBER OF ACRES CONTROLLED PER OPERATOR.	NONPRODUCING ENTERPRISES: 1909			
	Operators.		Land controlled.	
	Number.	Per cent of total.	Number of acres.	Per cent of total.
United States .....	1 245	100.0	<sup>2</sup> 1,115,527	100.0
Less than 100 acres.....	81	33.1	3,832	0.3
100 but less than 1,000.....	114	46.5	42,110	3.8
1,000 but less than 10,000.....	42	17.1	151,145	13.5
10,000 acres and over.....	8	3.3	918,440	82.3

<sup>1</sup> Exclusive of 15 operators who failed to report acreage.  
<sup>2</sup> Includes duplication of acreage which was included by operators in land reported as leased by them and also sublet to other operators.

**Table 18**

FIELD AND NUMBER OF ACRES CONTROLLED PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Land controlled.	
	Number.	Per cent of total.	Number of acres.	Per cent of total.
United States .....	1 7,289	100.0	<sup>2</sup> 14,072,064	100.0
Less than 100 acres.....	3,485	47.8	150,060	1.1
100 but less than 1,000 acres.....	3,121	42.8	867,080	6.2
1,000 but less than 10,000 acres.....	571	7.8	1,490,211	10.6
10,000 but less than 100,000 acres.....	88	1.2	2,241,775	15.9
100,000 acres and over.....	24	0.3	9,322,938	66.3
<b>Appalachian field</b> .....	4,678	100.0	<sup>2</sup> 9,722,508	100.0
Less than 100 acres.....	2,389	51.1	102,002	1.0
100 but less than 1,000 acres.....	1,923	41.1	502,305	5.2
1,000 but less than 10,000 acres.....	292	6.2	786,861	8.1
10,000 but less than 100,000 acres.....	55	1.2	1,550,157	15.9
100,000 acres and over.....	19	0.4	6,781,183	69.7
<b>Lima-Indiana field</b> .....	1,043	100.0	<sup>2</sup> 520,975	100.0
Less than 100 acres.....	353	33.8	18,451	3.5
100 but less than 1,000 acres.....	602	57.7	189,433	32.5
1,000 but less than 10,000 acres.....	85	8.1	189,304	36.3
10,000 acres and over.....	8	0.3	143,787	27.6
<b>Illinois field</b> .....	304	100.0	<sup>2</sup> 426,198	100.0
Less than 100 acres.....	169	55.6	7,509	1.8
100 but less than 1,000 acres.....	112	36.8	31,594	7.4
1,000 but less than 10,000 acres.....	16	5.3	64,548	15.1
10,000 acres and over.....	7	2.3	322,547	75.7
<b>Mid-Continent field</b> .....	951	100.0	<sup>2</sup> 2,637,630	100.0
Less than 100 acres.....	333	35.0	16,792	0.6
100 but less than 1,000 acres.....	420	45.1	146,783	5.6

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields. Exclusive also of 504 operators who failed to report acreage.  
<sup>2</sup> Includes duplication of acreage which was included by operators in land reported as leased by them and also sublet to other operators.

FIELD AND NUMBER OF ACRES CONTROLLED PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Land controlled.	
	Number.	Per cent of total.	Number of acres.	Per cent of total.
<b>Mid-Continent field—Contd.</b>				
Less than 100 acres.....	164	17.2	420,965	16.3
100 but less than 1,000 acres.....	20	2.1	585,964	22.2
10,000 but less than 100,000 acres.....	5	0.5	1,458,126	55.3
<b>Gulf field</b> .....	116	100.0	<sup>2</sup> 183,641	100.0
Less than 100 acres.....	91	78.4	1,213	0.7
100 but less than 1,000 acres.....	14	12.1	5,399	2.9
1,000 but less than 10,000 acres.....	6	5.2	11,606	6.3
10,000 acres and over.....	5	4.3	165,423	90.1
<b>California—Coastal and southern field</b> .....	108	100.0	<sup>2</sup> 83,562	100.0
Less than 100 acres.....	52	48.1	917	1.1
100 but less than 1,000 acres.....	37	34.3	13,121	15.7
1,000 acres and over.....	19	17.6	69,524	83.2
<b>California—San Joaquin Valley field</b> .....	195	100.0	<sup>2</sup> 375,781	100.0
Less than 100 acres.....	125	64.1	4,547	1.2
100 but less than 1,000 acres.....	58	29.7	15,216	4.0
1,000 but less than 10,000 acres.....	9	4.6	41,023	10.9
10,000 acres and over.....	3	1.5	314,995	83.8
<b>Other fields</b> .....	43	100.0	<sup>2</sup> 121,769	100.0
Less than 100 acres.....	14	32.6	444	0.4
100 but less than 1,000 acres.....	16	37.2	4,703	3.9
1,000 but less than 10,000 acres.....	9	20.0	21,301	17.5
10,000 acres and over.....	4	9.3	95,321	78.3

**SCALE OF PRODUCTION.**

Two different classifications of operators have been made to show, from different points of view, the size of the producing enterprises in the industry in 1909. The first classifies the operators according to value of products and the second according to the number of wage earners employed.

**Classification of operators according to value of products.**—Table 19 presents a classification of all operators of producing oil and gas wells according to value of products, by fields and states.<sup>1</sup>

This table discloses a considerable amount of concentration existing in the operation of petroleum and natural gas wells. The 19 operators, each of whom reported products valued at more than \$1,000,000,

together accounted for 46.2 per cent of the aggregate value of products. On the other hand the large number of small operators in the industry is remarkable; two-sevenths of the total number of operators reported products valued at less than \$1,000 each.

<sup>1</sup> The value of products represents the sum of the values reported by the individual operators and includes a duplication resulting from the fact that some operators distributed natural gas purchased by them from other operators. There is a duplication of certain operators in the several states, owing to the fact that some operators owned wells in more than one state. This duplication has been eliminated from the statistics for the United States where the output of all enterprises controlled by the same operator in different states is combined into one total. In the several states, however, the partial value of products of the operators mentioned above, may fall within different groups than those within which their aggregate value of products are arranged for the United States.

## CLASSIFICATION OF OPERATORS OF PRODUCING WELLS BY VALUE OF PRODUCTS, BY FIELDS AND STATES: 1909.

Table 19 FIELD OR STATE AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909				FIELD OR STATE AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Number of operators.	Value of products. <sup>1</sup>	Percent distribution.			Number of operators.	Value of products. <sup>1</sup>	Percent distribution.	
			Number of operators.	Value of products.				Number of operators.	Value of products.
<b>United States</b> .....	<b>7,793</b>	<b>\$185,416,684</b>	<b>100.0</b>	<b>100.0</b>	<b>Illinois</b> .....	<b>323</b>	<b>\$18,895,815</b>	<b>100.0</b>	<b>100.0</b>
Less than \$1,000.....	2,202	1,067,497	28.3	0.6	Less than \$1,000.....	31	13,110	9.6	0.1
\$1,000 but less than \$5,000.....	3,244	7,823,301	41.6	4.2	\$1,000 but less than \$5,000.....	115	315,770	35.6	1.7
\$5,000 but less than \$20,000.....	1,596	14,812,243	19.3	8.0	\$5,000 but less than \$20,000.....	97	1,036,333	30.0	5.5
\$20,000 but less than \$100,000.....	638	26,224,025	8.2	14.5	\$20,000 but less than \$100,000.....	50	2,298,001	15.5	12.2
\$100,000 but less than \$500,000.....	102	34,071,591	2.1	18.7	\$100,000 but less than \$500,000.....	23	5,046,497	7.1	26.7
\$500,000 but less than \$1,000,000.....	22	14,526,445	0.3	7.8	\$500,000 and over.....	7	10,185,504	2.2	53.9
\$1,000,000 and over.....	19	85,591,672	0.2	46.2	<b>Indiana</b> .....	<b>644</b>	<b>3,224,619</b>	<b>100.0</b>	<b>100.0</b>
<b>Appalachian field</b> .....	<b>4,830</b>	<b>97,764,941</b>	<b>100.0</b>	<b>100.0</b>	Less than \$1,000.....	386	105,020	59.9	3.3
Less than \$1,000.....	1,384	749,325	28.7	0.8	\$1,000 but less than \$5,000.....	161	363,808	25.0	11.3
\$1,000 but less than \$5,000.....	2,277	5,392,839	47.1	5.5	\$5,000 but less than \$20,000.....	78	709,236	12.1	23.9
\$5,000 but less than \$20,000.....	829	7,002,097	17.2	8.1	\$20,000 and over.....	19	1,986,555	3.0	61.6
\$20,000 but less than \$100,000.....	254	10,255,495	5.3	10.5	<b>Kansas</b> .....	<b>217</b>	<b>6,681,780</b>	<b>100.0</b>	<b>100.0</b>
\$100,000 but less than \$500,000.....	63	12,464,882	1.3	12.7	Less than \$1,000.....	44	24,404	20.3	0.4
\$500,000 but less than \$1,000,000.....	8	5,598,912	0.2	5.6	\$1,000 but less than \$5,000.....	90	209,452	41.5	3.1
\$1,000,000 and over.....	15	55,500,481	0.3	56.8	\$5,000 but less than \$20,000.....	54	528,685	24.9	7.9
<b>Lima-Indiana field</b> .....	<b>1,275</b>	<b>6,027,776</b>	<b>100.0</b>	<b>100.0</b>	\$20,000 but less than \$100,000.....	26	1,105,568	12.0	16.5
Less than \$1,000.....	589	222,530	45.2	3.7	\$100,000 and over.....	3	4,813,071	1.4	72.0
\$1,000 but less than \$5,000.....	474	1,145,004	37.2	19.0	<b>Kentucky</b> .....	<b>85</b>	<b>892,281</b>	<b>100.0</b>	<b>100.0</b>
\$5,000 but less than \$20,000.....	170	1,598,086	13.3	26.5	Less than \$1,000.....	33	16,359	33.3	1.8
\$20,000 but less than \$100,000.....	39	1,333,124	3.1	22.1	\$1,000 but less than \$5,000.....	31	64,181	36.5	7.2
\$100,000 and over.....	3	1,723,232	0.2	28.7	\$5,000 but less than \$20,000.....	12	109,625	14.1	12.3
<b>Illinois field</b> .....	<b>323</b>	<b>18,895,815</b>	<b>100.0</b>	<b>100.0</b>	\$20,000 and over.....	9	702,116	10.6	78.7
Less than \$1,000.....	31	13,110	9.6	0.1	<b>Louisiana</b> .....	<b>31</b>	<b>2,177,988</b>	<b>100.0</b>	<b>100.0</b>
\$1,000 but less than \$5,000.....	115	315,770	35.6	1.7	Less than \$1,000.....	5	2,462	16.1	0.1
\$5,000 but less than \$20,000.....	97	1,036,333	30.0	5.5	\$1,000 but less than \$5,000.....	3	7,828	9.7	0.4
\$20,000 but less than \$100,000.....	50	2,298,001	15.5	12.2	\$5,000 but less than \$20,000.....	12	128,935	33.7	5.9
\$100,000 but less than \$500,000.....	23	5,046,497	7.1	26.7	\$20,000 but less than \$100,000.....	6	238,369	19.4	10.9
\$500,000 and over.....	7	10,185,504	2.2	53.9	\$100,000 and over.....	5	1,800,392	16.1	82.7
<b>Mid-Century field</b> .....	<b>994</b>	<b>28,058,280</b>	<b>100.0</b>	<b>100.0</b>	<b>New York</b> .....	<b>708</b>	<b>2,688,998</b>	<b>100.0</b>	<b>100.0</b>
Less than \$1,000.....	130	65,840	13.1	0.3	Less than \$1,000.....	269	136,441	38.0	5.1
\$1,000 but less than \$5,000.....	324	812,817	32.6	3.1	\$1,000 but less than \$5,000.....	339	775,515	47.9	29.1
\$5,000 but less than \$20,000.....	321	3,318,413	32.3	12.7	\$5,000 but less than \$20,000.....	81	718,892	11.4	26.9
\$20,000 but less than \$100,000.....	178	7,445,074	17.9	28.6	\$20,000 and over.....	19	1,038,148	2.7	38.0
\$100,000 but less than \$500,000.....	34	6,058,751	3.4	23.3	<b>Ohio</b> .....	<b>1,188</b>	<b>29,620,959</b>	<b>100.0</b>	<b>100.0</b>
\$500,000 but less than \$1,000,000.....	4	1,992,343	0.4	7.6	Less than \$1,000.....	301	169,328	25.3	0.6
\$1,000,000 and over.....	3	6,365,042	0.3	24.4	\$1,000 but less than \$5,000.....	542	1,397,382	45.6	4.7
<b>Gulf field</b> .....	<b>128</b>	<b>6,877,891</b>	<b>100.0</b>	<b>100.0</b>	\$5,000 but less than \$20,000.....	227	2,204,774	19.1	7.4
Less than \$1,000.....	12	5,737	9.4	0.1	\$20,000 but less than \$100,000.....	93	3,569,159	7.8	12.0
\$1,000 but less than \$5,000.....	20	67,109	15.6	1.0	\$100,000 but less than \$1,000,000.....	20	4,319,674	1.7	14.6
\$5,000 but less than \$20,000.....	44	514,690	34.4	7.5	\$1,000,000 and over.....	5	17,960,642	0.4	60.6
\$20,000 but less than \$100,000.....	41	1,680,526	32.0	24.4	<b>Oklahoma</b> .....	<b>711</b>	<b>17,685,092</b>	<b>100.0</b>	<b>100.0</b>
\$100,000 but less than \$500,000.....	8	2,153,939	6.2	31.3	Less than \$1,000.....	67	33,452	9.4	0.2
\$500,000 and over.....	3	2,455,920	2.3	35.7	\$1,000 but less than \$5,000.....	210	560,461	29.5	3.2
<b>California—Coastal and southern field</b> .....	<b>144</b>	<b>7,009,700</b>	<b>100.0</b>	<b>100.0</b>	\$5,000 but less than \$20,000.....	254	2,645,888	35.7	15.0
Less than \$1,000.....	27	14,239	18.8	0.2	\$20,000 but less than \$100,000.....	143	5,996,156	20.1	33.9
\$1,000 but less than \$5,000.....	45	110,841	31.2	1.6	\$100,000 but less than \$500,000.....	33	5,760,115	4.6	32.6
\$5,000 but less than \$20,000.....	35	311,145	24.3	4.4	\$500,000 and over.....	4	2,688,990	0.6	15.2
\$20,000 but less than \$100,000.....	18	892,151	12.5	12.7	<b>Pennsylvania</b> .....	<b>3,030</b>	<b>39,197,475</b>	<b>100.0</b>	<b>100.0</b>
\$100,000 and over.....	19	5,681,324	13.2	81.0	Less than \$1,000.....	918	498,874	30.3	1.3
<b>California—San Joaquin Valley field</b> .....	<b>198</b>	<b>22,300,635</b>	<b>100.0</b>	<b>100.0</b>	\$1,000 but less than \$5,000.....	1,506	3,472,776	49.7	8.9
Less than \$1,000.....	25	9,944	12.6	(*)	\$5,000 but less than \$20,000.....	478	4,463,895	15.8	11.4
\$1,000 but less than \$5,000.....	21	64,381	10.6	0.3	\$20,000 but less than \$100,000.....	100	3,753,764	3.3	9.6
\$5,000 but less than \$20,000.....	41	451,965	20.7	2.0	\$100,000 but less than \$500,000.....	19	4,113,227	0.6	10.5
\$20,000 but less than \$100,000.....	80	3,956,751	40.4	17.7	\$500,000 but less than \$1,000,000.....	3	2,396,690	0.1	6.1
\$100,000 but less than \$500,000.....	24	4,988,501	12.1	22.4	\$1,000,000 and over.....	6	20,498,249	0.2	52.3
\$500,000 but less than \$1,000,000.....	4	2,976,240	2.0	13.3	<b>Texas</b> .....	<b>163</b>	<b>6,391,313</b>	<b>100.0</b>	<b>100.0</b>
\$1,000,000 and over.....	3	9,852,522	1.5	44.2	Less than \$1,000.....	26	11,259	16.0	0.2
<b>Other fields</b> .....	<b>50</b>	<b>481,646</b>	<b>100.0</b>	<b>100.0</b>	\$1,000 but less than \$5,000.....	41	102,185	25.2	1.6
Less than \$1,000.....	19	6,118	38.0	1.3	\$5,000 but less than \$20,000.....	45	529,565	27.6	8.3
\$1,000 but less than \$5,000.....	22	48,007	44.0	10.0	\$20,000 but less than \$100,000.....	44	1,785,477	27.0	27.9
\$5,000 but less than \$20,000.....	4	25,565	8.0	5.3	\$100,000 and over.....	7	3,962,827	4.3	62.0
\$20,000 and over.....	5	401,956	10.0	83.5	<b>West Virginia</b> .....	<b>442</b>	<b>28,188,087</b>	<b>100.0</b>	<b>100.0</b>
<b>California</b> .....	<b>339</b>	<b>29,310,335</b>	<b>100.0</b>	<b>100.0</b>	Less than \$1,000.....	65	36,333	14.7	0.1
Less than \$1,000.....	52	24,153	15.3	0.1	\$1,000 but less than \$5,000.....	166	449,496	37.6	1.6
\$1,000 but less than \$5,000.....	65	172,424	19.2	0.6	\$5,000 but less than \$20,000.....	122	1,220,596	27.6	4.3
\$5,000 but less than \$20,000.....	76	793,141	22.4	2.6	\$20,000 but less than \$100,000.....	60	2,500,588	13.6	9.2
\$20,000 but less than \$100,000.....	97	4,777,632	28.6	16.3	\$100,000 but less than \$500,000.....	22	4,241,389	5.0	15.0
\$100,000 but less than \$500,000.....	40	8,697,030	11.8	29.7	\$500,000 but less than \$1,000,000.....	4	2,608,105	0.9	9.3
\$500,000 but less than \$1,000,000.....	5	3,971,703	1.5	13.6	\$1,000,000 and over.....	3	17,041,590	0.7	60.5
\$1,000,000 and over.....	4	10,904,172	1.2	37.2	<b>All other states</b> .....	<b>28</b>	<b>164,266</b>	<b>100.0</b>	<b>100.0</b>
<b>Colorado</b> .....	<b>23</b>	<b>317,680</b>	<b>100.0</b>	<b>100.0</b>	Less than \$1,000.....	9	1,817	32.1	1.1
Less than \$1,000.....	9	4,261	39.1	1.3	\$1,000 but less than \$5,000.....	13	27,457	46.4	16.7
\$1,000 but less than \$5,000.....	9	20,550	39.1	6.5	\$5,000 and over.....	6	134,992	21.4	82.2
\$5,000 and over.....	5	292,869	21.7	92.2					

<sup>1</sup> Includes a duplication of \$9,888,877 resulting from the purchase of natural gas by operators of gas wells.

<sup>2</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields or states.

<sup>3</sup> Less than one-tenth of 1 per cent.

<sup>4</sup> Includes operators distributed as follows: Arkansas, 3; Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Wyoming, 7.

Classification of operators according to the number of wage earners employed.—Table 20 presents a classification of all operators of producing petroleum and

gas wells who reported regular wage earners, by the number of wage earners employed on December 15, 1909, or on the nearest representative day.<sup>1</sup>

Table 20	PRODUCING ENTERPRISES EMPLOYING REGULAR WAGE EARNERS: 1909				STATE AND NUMBER OF WAGE EARNERS PER OPERATOR.	PRODUCING ENTERPRISES EMPLOYING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.			Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.				Number of operators.	Number of wage earners.
<b>United States</b> .....					<b>Ohio—Continued.</b>				
1 to 5.....	13,448	39,831	100.0	100.0	21 to 50.....	9	280	1.7	4.7
6 to 20.....	2,749	4,875	79.7	12.2	51 to 100.....	6	469	1.1	8.0
21 to 50.....	519	5,313	15.1	13.3	Over 100.....	6	3,671	1.1	62.3
51 to 100.....	104	3,144	3.0	7.9	<b>Oklahoma</b> .....				
101 to 500.....	40	2,823	1.2	7.1	1 to 5.....	565	3,066	100.0	100.0
Over 500.....	28	5,687	0.8	14.3	6 to 20.....	456	851	80.7	28.7
	8	17,989	0.2	45.2	21 to 50.....	80	840	15.2	27.4
<b>California</b> .....					Over 50.....	18	515	3.2	16.8
1 to 5.....	279	7,007	100.0	100.0	Over 50.....	5	830	0.9	27.1
6 to 20.....	97	304	34.8	4.3	<b>Pennsylvania</b> .....				
21 to 50.....	132	1,470	47.3	21.0	1 to 5.....	984	7,397	100.0	100.0
51 to 100.....	30	989	10.8	13.8	6 to 20.....	884	1,434	80.8	19.4
Over 100.....	7	497	2.5	7.1	21 to 50.....	68	643	6.9	8.7
<b>Illinois</b> .....					51 to 100.....	19	631	1.9	8.5
1 to 5.....	272	4,059	100.0	100.0	Over 100.....	3	227	0.3	3.1
6 to 20.....	219	337	80.5	8.3	101 to 500.....	7	1,269	0.7	17.2
21 to 50.....	37	423	13.6	10.4	Over 500.....	3	3,193	0.3	43.2
51 to 100.....	7	263	2.6	6.5	<b>Texas</b> .....				
Over 100.....	6	430	2.2	10.6	1 to 5.....	124	1,405	100.0	100.0
<b>Indiana</b> .....					6 to 20.....	79	190	63.7	13.5
1 to 5.....	182	1,345	100.0	100.0	21 to 50.....	35	357	28.2	25.4
6 to 20.....	158	277	86.8	20.6	51 to 100.....	4	106	3.2	7.5
Over 20.....	20	216	11.0	16.1	Over 100.....	3	186	2.4	13.2
<b>Kansas</b> .....					Over 100.....	3	503	2.4	40.3
1 to 5.....	119	1,302	100.0	100.0	<b>West Virginia</b> .....				
6 to 20.....	105	166	88.2	12.7	1 to 5.....	264	7,093	100.0	100.0
21 to 50.....	8	107	6.7	8.2	6 to 20.....	194	353	73.5	5.0
Over 50.....	3	78	2.5	6.0	21 to 50.....	49	541	18.6	7.6
<b>Ohio</b> .....					51 to 100.....	11	325	4.2	4.6
1 to 5.....	532	5,897	100.0	100.0	Over 100.....	6	452	2.3	6.4
6 to 20.....	436	761	82.0	12.9	<b>All other states<sup>2</sup></b> .....				
	75	710	14.1	12.1	1 to 5.....	233	1,260	100.0	100.0
					6 to 20.....	190	320	81.5	25.4
					21 to 50.....	32	278	13.7	22.1
					Over 50.....	7	224	3.0	17.8
						4	438	1.7	34.8

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more states.

<sup>2</sup> Includes operators distributed as follows: Arkansas, 1; Colorado, 9; Kentucky, 39; Louisiana, 22; Michigan, 1; New York, 154; North Dakota, 1; Wyoming, 6.

This table emphasizes still more the high degree of concentration in the control of the industry. Eight operators in the United States employed on December 15, 1909, or the nearest representative day, 18,000 wage earners, or 45.2 per cent of the total number of regular wage earners employed in the industry.

Table 21 presents a classification of nonproducing petroleum and gas wells employing regular wage earners, according to the number of wage earners

<sup>1</sup> There is a duplication of certain operators in the several states, owing to the fact that some operators owned wells in more than one state. This duplication has been eliminated from the statistics for the United States where the number of wage earners employed in enterprises controlled by the same operator in different states is combined into one total. In the several states, however, the number of wage earners employed in each of such enterprises may fall in different groups than those in which the aggregate number of wage earners are arranged for the United States.

employed for 1909, for the United States and the state of California.

Table 21	NONPRODUCING ENTERPRISES REPORTING REGULAR WAGE EARNERS: 1909				
	STATE AND NUMBER OF WAGE EARNERS PER OPERATOR.	Number of operators.	Number of wage earners.	Per cent distribution.	
				Number of operators.	Number of wage earners.
<b>United States</b> .....					
1 to 5.....	203	1,451	100.0	100.0	
6 to 20.....	101	372	49.8	25.6	
Over 20.....	95	795	46.8	54.8	
	7	284	3.4	19.6	
<b>California</b> .....					
1 to 5.....	156	1,152	100.0	100.0	
6 to 20.....	76	293	48.7	25.4	
Over 20.....	6	260	3.8	22.6	
<b>All other states</b> .....					
1 to 5.....	47	289	100.0	100.0	
6 to 20.....	25	79	53.2	26.4	
Over 20.....	21	196	44.7	65.6	
	1	24	2.1	8.0	

## MINES AND QUARRIES.

## MECHANICAL POWER.

A summary of mechanical power used in the operation and drilling of petroleum and gas wells is presented in Table 22. The statistics for electric power are not given in the general tables. Electric power was used very little, the total used amounting to but seven-tenths of 1 per cent of the aggregate horsepower. Of the total primary power, 160 horsepower was sup-

plied by electricity rented from other establishments, 100 horsepower being reported from Pennsylvania and 30 horsepower each from California and West Virginia. In addition, 454 electric motors of 8,589 horsepower were run by current generated by the enterprises reporting them, of which 371 motors, of 7,416 horsepower, were in West Virginia.

Table 22

MECHANICAL POWER: 1909

CHARACTER OF OPERATIONS.	Number of operators.	Number of completed wells Dec. 31, 1909.		Primary power.										Electric motors run by current generated by the enterprise using.				
		Total.	Average per operator.	Aggregate horsepower.	Average horsepower per operator.	Total horsepower.	Owned.						Electric horsepower rented from other establishments.	Num-ber.	Total horse-power.	Average horse-power per motor.		
							Steam engines.			Gas and gasoline engines.							Per cent of total horse-power owned.	
							Num-ber.	Total horse-power.	Average horse-power per engine.	Num-ber.	Total horse-power.	Average horse-power per engine.					Steam.	Gas and gasoline.
<b>All enterprises.....</b>	8,053	186,448	21	1,230,546	153	1,230,386	37,231	754,720	20	21,794	475,866	22	61.3	38.7	160	454	8,589	19
Production only.....	5,206	56,265	11	286,782	55	286,782	10,945	171,847	16	4,866	114,935	24	59.9	40.1	.....	8	127	16
Production and drilling of new wells.....	2,736	110,055	40	935,187	342	935,027	25,983	574,811	22	16,896	360,216	21	61.5	38.5	160	446	8,462	19
Nonproducing.....	260	128	(*)	8,577	33	8,577	303	8,062	27	32	515	16	94.0	6.0	.....	.....	.....	.....
<b>Producing enterprises<sup>1</sup></b>	7,890	147,693	19	882,027	112	881,887	26,160	496,441	19	17,604	385,426	22	56.3	43.7	160	45	799	18
Petroleum.....	6,683	129,422	19	730,664	109	730,634	25,554	435,120	17	16,106	295,514	18	59.6	40.4	30	7	112	16
Production only.....	4,393	52,687	12	274,546	62	274,546	10,782	166,660	15	4,701	107,886	23	60.7	39.3	.....	4	77	19
Production and drilling of new wells.....	2,290	76,735	34	456,118	199	456,088	14,772	268,460	18	11,405	187,628	16	58.9	41.1	30	3	35	12
Natural gas.....	1,207	18,271	15	151,363	125	151,233	606	61,321	101	1,498	89,912	60	40.5	59.5	130	38	687	18
Production only.....	797	3,258	4	9,916	12	9,916	85	3,493	41	132	6,423	49	35.2	64.8	.....	4	50	12
Production and drilling of new wells.....	410	15,013	37	141,447	345	141,317	521	57,828	111	1,366	83,489	61	40.9	59.1	130	34	637	16

<sup>1</sup> Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

<sup>2</sup> Less than 1.

<sup>3</sup> Exclusive of 52 operators in Pennsylvania and West Virginia who could not be classified.

## PART II.—PETROLEUM.

The data presented in this part are supplementary to the general statistics given in Part I. Tables 23 and 24 show the production of petroleum for the entire industry; the remaining tables in Part II relate to the petroleum branch of the industry which comprises all operators whose principal or only product was petroleum. The operators thus classified contributed 94.8 per cent of the total production of petroleum in the United States in 1909. Certain operators in

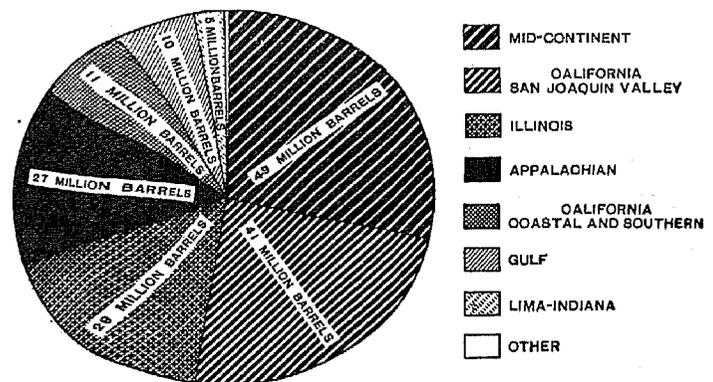
Pennsylvania and West Virginia made reports which could not be classified according to principal product; these operators are not represented in the statistics given in this part, but since they contributed only 4.8 per cent of the total production of petroleum, their omission detracts but little from the value of the figures. Detailed statistics for the petroleum branch of the industry are presented in Table 50 at the end of this report.

### PRODUCTION OF PETROLEUM.

This section presents the statistics for the production of petroleum. The accompanying diagram shows the production in 1909 graphically, by fields. The fields and states shown in the tables are arranged in descending order, according to the value of petroleum produced in 1909. Table 23 presents the statistics for the quantity and value of petroleum produced in 1909, by fields and states.

the states of the middle and far West, where the average value per barrel was lower than in the East.

PRODUCTION OF PETROLEUM BY FIELDS: 1909



**Table 23**

FIELD AND STATE.	PETROLEUM PRODUCTION: 1909			
	Quantity.		Value at well.	
	Barrels.	Per cent distribution.	Total.	Per cent distribution.
<b>United States</b> .....	<b>171,559,394</b>	<b>100.0</b>	<b>\$117,696,529</b>	<b>100.0</b>
<b>Fields:</b>				
Appalachian <sup>1</sup> .....	26,811,032	15.6	40,977,227	34.8
California—San Joaquin Valley .....	40,826,778	23.8	22,077,756	18.8
Illinois .....	29,146,231	17.0	18,329,637	15.6
Mid-Continent .....	49,128,533	28.6	18,250,632	15.5
California—Coastal and southern .....	11,277,375	6.6	6,989,033	5.9
Gulf .....	9,377,844	5.5	6,667,092	5.7
Lima—Indiana .....	4,676,864	2.7	4,079,482	3.5
Other fields <sup>1</sup> .....	317,637	0.2	325,670	0.3
<b>Leading states:</b>				
California .....	52,104,153	30.4	29,066,789	24.7
Illinois .....	29,146,231	17.0	18,329,637	15.6
Oklahoma .....	45,671,724	26.6	16,233,855	13.8
West Virginia .....	9,902,594	5.8	15,776,043	13.4
Pennsylvania .....	8,543,806	5.0	13,938,626	11.8
Ohio .....	9,263,948	5.4	11,302,653	9.6
Texas .....	8,682,868	5.1	6,196,951	5.3
Louisiana .....	2,889,919	1.7	1,976,007	1.7
New York .....	1,159,185	0.7	1,857,630	1.6
Indiana .....	2,079,977	1.2	1,741,475	1.5
Kansas .....	1,182,293	0.7	462,512	0.4
All other states <sup>2</sup> .....	932,696	0.5	784,341	0.7

<sup>1</sup> Tennessee is included in "Other fields" in order to avoid disclosing individual operations.

<sup>2</sup> Includes Arkansas, Colorado, Kentucky, Michigan, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Considerable differences appear in this table in the proportion of the total quantity and the proportion of the total value of the product contributed by the different fields and states. Thus the fields and states in the East showed a larger percentage of the total value than of the total quantity, whereas the reverse is generally true of those in the middle West and far West. The greater rate of increase in quantity of product than in value, which is shown in Table 3, is due largely to the fact that in 1909 a greater portion of the crude petroleum than formerly was produced by

Table 24 gives the quantity of petroleum produced, by states, for each year from 1902 to 1909, inclusive. The figures for 1902 and 1909 are those reported by the Bureau of the Census. For the other years the figures are those compiled by the United States Geological Survey. The apparent decrease shown in 1909 is due to the differences in the methods employed by the two bureaus in compiling the statistics. As previously stated, the quantity of petroleum produced in 1909 as reported by the Survey was 182,134,274 barrels. The differences between the methods employed by the two bureaus do not affect in any essential degree, however, either the rank of the states or the per cent distribution for 1909.

Oklahoma, California, and Illinois showed marked increases in production for most of the years given in the table. In Ohio and Pennsylvania, on the other hand, the production of petroleum decreased continuously throughout the whole period; and West Virginia showed a decline until 1907, but an increase for the following two years. The year of greatest production in Indiana was 1904; in Texas, 1905; in Louisiana, 1906. The greatest relative decrease between the year of maximum production shown and 1909 took place in Indiana, in which state the production in 1909 was only one-fifth that in 1904, while the production in Texas in 1909 was only one-third of that in 1905.

## MINES AND QUARRIES.

Table 24 STATE.	PETROLEUM PRODUCTION, BARRELS (42 GALLONS): 1902-1909.															
	1909		1908		1907		1906		1905		1904		1903		1902	
United States.....	171,559,394		178,527,355		166,095,335		126,493,936		134,717,580		117,080,960		100,461,337		89,275,302	
California.....	52,104,153		44,854,737		39,748,375		33,098,598		33,427,473		29,649,434		24,382,472		13,984,268	
Oklahoma.....	45,671,724		45,798,765		43,524,128		21,718,648		12,013,495		1,366,748		138,911		(2)	
Illinois.....	29,146,231		33,686,238		24,281,973		4,397,050		181,084		.....		.....		(2)	
West Virginia.....	9,902,594		9,523,176		9,095,296		10,120,935		11,578,110		12,644,686		12,899,395		13,513,345	
Ohio.....	9,263,948		10,858,797		12,207,448		14,787,763		16,346,660		18,876,631		20,480,286		21,014,231	
Texas.....	8,682,868		11,206,464		12,322,696		12,567,897		28,136,189		22,241,413		17,955,572		18,515,017	
Pennsylvania.....	8,543,806		9,424,325		9,999,306		10,256,893		10,437,195		11,125,762		11,355,156		12,063,880	
Louisiana.....	2,889,919		5,788,874		5,090,221		9,077,528		8,910,416		2,958,958		917,771		(2)	
Indiana.....	2,079,977		3,283,629		5,128,037		7,673,477		10,964,247		11,339,124		9,186,411		7,480,896	
Kansas.....	1,182,293		1,801,781		2,499,521		(8)		(8)		4,250,779		932,214		331,749	
New York.....	1,159,185		1,160,128		1,212,300		1,243,517		1,117,582		1,113,264		1,162,978		1,119,730	
All other states.....	932,696		1,140,441		1,166,034		1,551,630		1,605,129		1,514,161		1,050,171		1,252,186	
	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.	Rank. <sup>4</sup>	Per cent distribution.
California.....	1	30.4	2	25.1	2	23.9	1	26.2	1	24.8	1	25.3	1	24.3	3	15.7
Oklahoma.....	2	26.6	1	25.7	1	26.2	2	17.2	4	18.9	9	1.2	12	0.1	12	(2)
Illinois.....	3	17.0	3	18.9	3	14.6	0	3.5	12	0.1	.....	.....	.....	.....	17	(3)
West Virginia.....	4	5.8	6	5.3	7	5.5	6	8.0	5	8.6	4	10.8	4	12.8	4	15.1
Ohio.....	5	5.4	5	6.1	5	7.3	3	11.7	3	12.1	3	16.1	2	20.4	1	23.5
Texas.....	6	5.1	4	6.3	4	7.4	4	9.9	2	20.9	2	19.0	3	17.9	2	20.7
Pennsylvania.....	7	5.0	7	5.3	6	6.0	5	8.1	7	7.8	6	9.5	5	11.3	5	13.5
Louisiana.....	8	1.7	8	3.2	9	3.0	7	7.2	8	6.6	8	2.5	9	0.9	8	(2)
Indiana.....	9	1.2	9	1.8	8	3.1	8	6.1	6	8.1	5	9.7	6	9.1	6	8.4
Kansas.....	10	0.7	10	1.0	10	1.5	(3)	(3)	(3)	7	3.6	8	8	0.9	10	0.4
New York.....	11	0.7	11	0.6	11	0.7	10	1.0	10	0.8	10	1.0	7	1.2	7	1.3
All other states.....	.....	0.5	.....	0.6	.....	0.7	.....	1.2	.....	1.2	.....	1.3	.....	1.0	.....	1.4

<sup>1</sup> Includes Kansas.

<sup>2</sup> Included in "All other states."

<sup>3</sup> Included with Oklahoma.

<sup>4</sup> The states shown in this table are given their actual ranking among all the states, even though the ranking of some states which can not be shown is higher than that of some of the states in the table. The rank of the less important states can not in all cases be given with absolute accuracy, though the ranking in the table is very close to the correct one.

CHARACTER OF ORGANIZATION.

General summary.—Table 25 shows the relative importance of the different forms of organization in the petroleum branch of the industry in 1909.

Although less than one-fourth of the operators were incorporated, they reported more than three-fourths of the wage earners and more than two-thirds of the

total value of products for the industry. The incorporated operators employed an average of 13 wage earners and the value of their products averaged \$51,619, while individual operators and firms averaged only 1 wage earner each and their average value of products was \$4,601 and \$5,735, respectively.

CHARACTER OF ORGANIZATION.	PETROLEUM ENTERPRISES: 1909							
	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products.
Total all classes.....	6,683	24,033	4	\$104,550,845	\$15,644	100.0	100.0	100.0
Individual.....	2,008	1,929	1	9,239,356	4,601	30.0	8.0	8.8
Firm.....	3,128	2,991	1	17,940,555	5,735	46.8	12.4	17.2
Corporation.....	1,437	18,621	13	74,176,585	51,619	21.5	77.5	70.9
Other.....	110	492	4	3,194,349	29,040	1.6	2.0	3.1

Detailed summary for incorporated and unincorporated operators.—Table 26 gives more detailed statistics for incorporated and unincorporated operators in the United States, with a further division of each of these classes according to the character of their operations.

In considering the average expenses per barrel shown in the table it should be taken into consideration that the average expenses per barrel for incorporated and unincorporated producers are affected by the method of management and of accounting. Such supervisory services, for instance, as are performed for

corporations by salaried officers or managers, are often performed in whole or in part for unincorporated producers by proprietors and firm members, many of whom make no salary charges for these services, but look to the profits of the enterprise for their compensation. Indeed, a considerable number of such proprietors and firm members were returned as performing manual labor at their wells, although the expenses reported included no wage payments for this labor. The fact that the expense per barrel for the corporations was low in spite of these circumstances is no doubt attributable largely to the savings of large production.

Table 26

	PETROLEUM ENTERPRISES: 1909					
	Incorporated.			Unincorporated.		
	Total.	Engaged in—		Total.	Engaged in—	
		Production only.	Production and drilling of new wells.		Production only.	Production and drilling of new wells.
Number of operators.....	1,437	629	808	5,246	3,764	1,482
Number of wells:						
Completed Dec. 31, 1909.....	54,261	10,663	43,598	75,161	42,024	33,137
Drilled in 1909, total.....	6,111	1	6,110	5,340		5,340
Dry.....	915		914	675		675
Abandoned.....	2,832	482	2,370	1,265	682	613
Land controlled, gross acreage.....	3,990,637	330,243	3,630,394	1,028,947	482,461	546,486
Owned.....	237,911	20,768	217,143	217,377	129,778	87,599
Held under lease.....	3,722,726	309,475	3,413,251	811,570	352,683	458,887
Persons engaged in industry:						
Proprietors and firm members.....				13,064	8,846	4,218
Number performing manual labor.....				2,068	1,507	561
Salaried officers of corporations, superintendents, and managers.....	1,510	383	1,127	410	155	261
Clerks and other subordinate salaried employees.....	945	192	793	277	123	154
Wage earners, Dec. 15, 1909, or nearest representative day.....	18,621	1,481	17,140	5,412	1,989	3,426
Capital.....	\$284,879,166	\$29,362,934	\$235,516,232	\$95,548,890	\$45,841,181	\$49,707,709
Expenses of operation and development.....	\$59,042,920	\$3,587,661	\$55,455,259	\$20,705,924	\$4,572,912	\$16,133,012
Services:						
Salaried officers of corporations, superintendents, and managers.....	\$2,318,890	\$343,002	\$1,975,888	\$456,918	\$134,512	\$322,406
Clerks and other subordinate salaried employees.....	\$561,595	\$59,285	\$502,301	\$122,806	\$47,428	\$75,378
Wage earners.....	\$14,963,454	\$1,110,345	\$13,793,109	\$3,934,286	\$1,332,048	\$2,602,238
Supplies, fuel, and rent of power.....	\$22,779,547	\$691,840	\$22,087,707	\$6,335,080	\$785,190	\$5,549,890
Miscellaneous:						
Contract work, including compensation of part-time employees.....	\$4,981,669	\$143,027	\$4,838,642	\$4,399,151	\$614,498	\$3,784,653
Royalties and rent of wells.....	\$8,542,163	\$879,750	\$7,662,413	\$3,967,018	\$1,247,706	\$2,719,312
Rent of offices and other sundry expenses.....	\$4,655,611	\$390,412	\$4,265,199	\$1,490,665	\$411,530	\$1,079,135
Per cent distribution:						
Salaries.....	5.4	11.2	5.0	2.8	4.0	2.5
Wages.....	25.2	30.9	24.9	19.0	29.1	16.1
Supplies, fuel, and rent of power.....	38.6	19.3	39.8	30.6	17.2	34.4
Contract work.....	8.4	4.0	8.7	21.2	13.4	23.5
Royalties and rent of wells.....	14.5	24.5	13.8	19.2	27.3	16.9
Rent of offices and other sundry expenses.....	7.9	10.0	7.7	7.2	9.0	6.7
Average per barrel of petroleum:						
Total.....	\$0.463	\$0.275	\$0.485	\$0.590	\$0.413	\$0.671
Salaries.....	\$0.025	\$0.031	\$0.024	\$0.017	\$0.016	\$0.017
Wages.....	\$0.117	\$0.085	\$0.121	\$0.112	\$0.120	\$0.108
Supplies, fuel, and rent of power.....	\$0.179	\$0.083	\$0.133	\$0.180	\$0.071	\$0.221
Contract work.....	\$0.039	\$0.011	\$0.042	\$0.125	\$0.056	\$0.157
Royalties and rent of wells.....	\$0.067	\$0.068	\$0.067	\$0.113	\$0.113	\$0.113
Rent of offices and other sundry expenses.....	\$0.037	\$0.028	\$0.038	\$0.042	\$0.037	\$0.045
Products:						
Total value.....	\$74,176,585	\$6,908,456	\$67,268,129	\$30,374,260	\$11,304,382	\$19,069,878
Petroleum:						
Barrels (42 gals.).....	127,472,892	13,028,717	114,444,175	35,108,516	11,069,695	24,038,821
Value at wells.....	\$73,473,513	\$6,847,857	\$66,625,656	\$30,127,243	\$11,243,154	\$18,884,089
Average per barrel.....	\$0.576	\$0.526	\$0.582	\$0.858	\$1.016	\$0.786

<sup>1</sup> The cost of purchased gas amounting to \$3,946 was distributed as follows: Incorporated organizations, \$3,862; unincorporated organizations, \$84.

Table 27 presents detailed statistics for producing petroleum enterprises for 1909, by fields, classified in the same way as those shown in Table 26 for the United States.

PRINCIPAL STATISTICS FOR PETROLEUM ENTERPRISES: 1909.

Table 27 FIELD, FORM OF ORGANIZATION, AND CHARACTER OF OPERATIONS.		Number of operators.	NUMBER OF WELLS.			PERSONS ENGAGED IN INDUSTRY.					
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.
				Total.	Dry.		Total.	Number performing manual labor.			
1	Appalachian:										
2	Incorporated.....	346	21,704	1,316	260	811			275	96	3,146
3	Production only.....	158	3,093			45			76	16	324
4	Production and drilling of new wells.....	188	18,611	1,316	260	766			199	80	2,822
5	Unincorporated.....	3,011	56,135	3,440	423	615	9,764	1,752	173	118	3,040
6	Production only.....	2,840	30,880			243	6,669	1,278	73	66	1,253
7	Production and drilling of new wells.....	1,071	25,255	3,440	423	372	3,095	474	100	52	1,787
8	Lima-Indiana:										
9	Incorporated.....	151	9,819	225	34	1,449			101	42	1,163
10	Production only.....	113	3,574			343			61	23	295
11	Production and drilling of new wells.....	38	6,245	225	34	1,106			40	19	868
12	Unincorporated.....	630	10,909	296	46	523	1,403	199	35	29	547
13	Production only.....	531	8,124			384	1,220	165	17	13	318
14	Production and drilling of new wells.....	99	2,785	296	46	139	243	34	18	7	229
15	Illinois:										
16	Incorporated.....	80	8,318	1,829	272	141			122	68	3,437
17	Production only.....	28	525			1			18	9	62
18	Production and drilling of new wells.....	52	7,793	1,829	272	140			104	59	3,375
19	Unincorporated.....	231	2,497	666	102	42	809	22	58	43	578
20	Production only.....	95	652			4	323	10	11	11	97
21	Production and drilling of new wells.....	133	1,815	666	102	38	481	12	47	32	481
22	Mid-Continent:										
23	Incorporated.....	523	9,565	1,668	175	239			416	204	2,769
24	Production only.....	250	2,880	1	1	83			142	72	424
25	Production and drilling of new wells.....	273	6,679	1,667	174	156			274	192	2,345
26	Unincorporated.....	328	4,765	724	49	76	706	39	99	75	690
27	Production only.....	206	1,847			41	437	23	39	27	213
28	Production and drilling of new wells.....	122	2,918	724	49	35	269	16	60	48	467
29	Gulf:										
30	Incorporated.....	60	1,000	358	114	142			84	80	1,239
31	Production only.....	11	34			1			13	10	88
32	Production and drilling of new wells.....	49	966	358	114	142			71	70	1,151
33	Unincorporated.....	62	306	173	53	31	197	39	28	6	306
34	Production only.....	21	56			2	101	16	6		40
35	Production and drilling of new wells.....	41	250	173	53	29	96	23	22	6	266
36	California—Coastal and southern:										
37	Incorporated.....	83	1,113	100	8	31			137	104	1,613
38	Production only.....	27	248			6			17	8	48
39	Production and drilling of new wells.....	56	865	100	8	25			120	96	1,565
40	Unincorporated.....	56	445	11		8	77	13	14	10	125
41	Production only.....	53	396			8	73	12	8	6	51
42	Production and drilling of new wells.....	3	49	11			4	1	6	4	74
43	California—San Joaquin Valley:										
44	Incorporated.....	178	2,645	571	25	30			368	291	5,117
45	Production only.....	34	271			3			53	14	229
46	Production and drilling of new wells.....	144	2,374	571	25	27			315	277	4,888
47	Unincorporated.....	14	83	25			29		9	5	131
48	Production only.....	4	24				5		1		12
49	Production and drilling of new wells.....	10	59	25			24		8	5	119
50	Other:										
51	Incorporated.....	16	97	44	27	9			7		137
52	Production only.....	8	32			1			3		11
53	Production and drilling of new wells.....	8	65	44	27	8			4		126
54	Unincorporated.....	14	21	5	2		19	4			5
55	Production only.....	11	15				13	3			2
56	Production and drilling of new wells.....	3	6	5	2		6	1			3

Table 27—Continued.		EXPENSES OF OPERATION AND DEVELOPMENT.								
		Capital.	Services.				Supplies, fuel, and rent of power.	Miscellaneous.		
			Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.		Contract work.	Royalties and rent of wells.	Other.
FIELD, FORM OF ORGANIZATION AND CHARACTER OF OPERATIONS.										
Appalachian:										
1	Incorporated.....	\$26,127,668	\$8,967,230	\$312,235	\$83,084	\$2,082,208	\$2,789,083	\$1,552,976	\$1,370,490	\$777,104
2	Production only.....	6,424,587	704,598	57,877	8,218	214,725	152,036	35,893	161,830	74,049
3	Production and drilling of new wells..	19,703,081	8,262,632	254,408	74,866	1,867,483	2,637,047	1,517,113	1,208,660	703,055
4	Unincorporated.....	64,232,076	10,405,226	153,918	43,086	2,048,505	2,316,291	2,695,661	1,685,561	562,264
5	Production only.....	32,858,127	2,823,841	63,763	25,724	790,467	553,195	433,506	710,748	246,438
6	Production and drilling of new wells..	31,373,949	7,581,385	90,155	17,362	1,258,038	2,266,096	2,262,155	974,753	315,826
Lima-Indiana:										
7	Incorporated.....	7,067,453	1,827,105	96,113	22,533	712,476	2,324,059	151,452	271,393	249,079
8	Production only.....	3,812,981	499,815	39,164	7,828	201,461	271,577	25,533	109,398	44,854
9	Production and drilling of new wells..	3,254,472	1,327,290	56,949	14,705	511,015	252,482	125,919	161,995	204,225
10	Unincorporated.....	8,251,539	1,446,618	24,606	9,870	365,647	288,522	342,642	312,602	102,429
11	Production only.....	5,668,272	680,074	8,666	3,780	221,543	75,731	112,370	195,751	62,233
12	Production and drilling of new wells..	2,583,267	766,544	15,940	6,090	144,104	213,091	230,272	116,851	40,196
Illinois:										
13	Incorporated.....	26,123,349	9,630,450	271,350	69,617	2,162,555	2,955,406	1,534,644	1,911,094	725,874
14	Production only.....	993,491	154,869	15,337	3,812	38,064	28,835	2,479	51,704	14,038
15	Production and drilling of new wells..	25,129,858	9,475,581	256,013	65,805	2,123,891	2,926,571	1,532,165	1,859,390	711,836
16	Unincorporated.....	7,559,103	3,692,228	53,699	17,369	438,576	1,133,208	740,555	842,557	466,234
17	Production only.....	1,471,099	277,847	7,507	2,893	66,845	21,449	16,123	138,465	24,625
18	Production and drilling of new wells..	6,088,004	3,414,381	46,192	14,476	371,731	1,111,759	724,432	704,132	441,609
Mid-Continent:										
19	Incorporated.....	53,435,338	10,503,402	571,290	170,497	2,089,888	2,316,919	1,456,550	2,158,423	894,535
20	Production only.....	11,573,893	1,189,726	124,138	25,781	333,121	171,050	62,500	325,069	148,067
21	Production and drilling of new wells..	41,861,445	9,313,676	447,152	144,716	1,756,767	2,290,869	1,394,350	1,833,354	746,468
22	Unincorporated.....	10,952,711	2,902,083	131,298	33,636	544,717	838,501	550,945	538,083	264,903
23	Production only.....	4,298,965	508,857	36,344	10,951	161,040	75,241	36,851	130,807	57,623
24	Production and drilling of new wells..	6,653,746	2,393,226	94,954	22,685	383,677	763,260	514,094	407,276	207,280
Gulf:										
25	Incorporated.....	10,081,804	3,843,515	164,301	181,444	1,262,927	1,189,059	17,173	753,232	275,379
26	Production only.....	1,327,690	115,335	15,412	6,140	60,027	18,690	.....	6,884	8,182
27	Production and drilling of new wells..	8,754,114	3,728,180	148,889	175,304	1,202,900	1,170,369	17,173	746,348	267,197
28	Unincorporated.....	1,407,974	1,047,262	43,995	6,090	295,493	414,828	50,605	197,083	39,168
29	Production only.....	167,400	98,310	6,400	.....	35,134	20,425	5,063	26,641	4,647
30	Production and drilling of new wells..	1,240,574	948,952	37,595	6,090	260,359	394,403	45,542	170,442	34,521
California—Coastal and southern:										
31	Incorporated.....	30,611,450	5,353,994	233,977	71,161	1,483,695	2,685,168	59,538	501,881	318,574
32	Production only.....	1,576,091	143,013	12,935	1,626	43,797	31,726	15,347	22,666	14,916
33	Production and drilling of new wells..	29,035,359	5,210,981	221,042	69,535	1,439,898	2,653,442	44,191	479,215	303,658
34	Unincorporated.....	2,070,651	446,337	34,697	8,880	113,919	220,081	8,789	20,312	39,659
35	Production only.....	1,075,751	126,367	10,932	4,080	39,815	29,981	8,789	19,016	13,754
36	Production and drilling of new wells..	994,900	319,970	23,765	4,800	74,104	190,100	.....	1,296	25,905
California—San Joaquin Valley:										
37	Incorporated.....	109,675,104	18,547,096	655,850	263,250	4,987,561	9,503,708	194,580	1,568,625	1,373,522
38	Production only.....	3,228,201	769,775	75,815	5,880	215,169	216,147	240	201,978	54,546
39	Production and drilling of new wells..	106,448,903	17,777,321	580,035	257,370	4,772,392	9,287,561	194,340	1,366,647	1,318,976
40	Unincorporated.....	932,536	752,592	14,705	3,875	123,351	217,898	7,278	369,958	15,527
41	Production only.....	168,267	52,524	900	.....	10,129	8,417	.....	25,416	1,962
42	Production and drilling of new wells..	764,269	699,768	13,805	3,875	107,222	209,481	7,278	344,542	13,565
Other:										
43	Incorporated.....	1,751,000	370,128	13,724	.....	122,144	171,145	14,456	7,115	41,544
44	Production only.....	428,000	10,530	2,324	.....	3,381	1,779	1,065	221	1,760
45	Production and drilling of new wells..	1,323,000	359,598	11,400	.....	118,763	169,366	13,391	6,894	39,784
46	Unincorporated.....	142,300	13,578	.....	.....	4,078	5,451	2,646	922	481
47	Production only.....	133,300	4,792	.....	.....	1,075	751	1,796	922	248
48	Production and drilling of new wells..	9,000	8,786	.....	.....	3,003	4,700	850	.....	233

<sup>1</sup> The cost of contract work includes compensation of part-time employees.

<sup>2</sup> The cost of purchased gas amounting to \$3,946 was distributed among the several fields as follows: Appalachian, \$84; Lima-Indiana, \$288; Mid-Continent, \$2,740; California-Coastal and southern, \$834.

PETROLEUM AND NATURAL GAS.

PETROLEUM ENTERPRISES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.											PRODUCTS.					
	Per cent distribution.						Average expense per barrel.						Total value.	Petroleum.			
	Salaries.	Wages.	Supplies, fuel, and rent of power.	Contract work. <sup>1</sup>	Royalties and rent of wells.	Other miscellaneous.	Total.	Salaries.	Wages.	Supplies, fuel, and rent of power.	Contract work. <sup>1</sup>	Royalties and rent of wells.		Other miscellaneous.	Barrels (42 gallons).	Total.	Average per barrel.
1	4.4	23.2	31.1	17.3	15.3	8.7	\$1.137	\$0.050	\$0.204	\$0.354	\$0.197	\$0.174	\$0.098	\$10,088,612	7,889,440	\$10,578,374	\$1.341
2	9.4	30.5	21.6	5.1	23.0	10.5	0.805	0.075	0.245	0.174	0.041	0.185	0.085	1,323,510	875,391	1,314,003	1.502
3	4.0	22.6	31.9	18.4	14.0	8.5	1.178	0.047	0.260	0.376	0.216	0.172	0.160	9,305,102	7,014,049	9,203,771	1.321
4	1.9	19.7	30.9	25.9	16.2	5.4	1.011	0.019	0.199	0.313	0.262	0.104	0.055	16,018,172	10,287,552	16,473,922	1.601
5	3.2	28.0	19.6	15.4	25.2	8.7	0.613	0.019	0.171	0.120	0.094	0.154	0.053	7,448,785	4,009,758	7,394,978	1.604
6	1.4	16.6	35.1	29.8	12.9	4.2	1.335	0.019	0.222	0.469	0.398	0.172	0.056	9,169,387	5,078,095	9,078,944	1.599
7	6.5	39.0	17.7	8.3	14.9	13.6	0.840	0.055	0.328	0.149	0.070	0.125	0.115	1,905,072	2,173,959	1,898,856	0.873
8	9.4	40.3	14.3	5.1	21.9	9.0	0.622	0.059	0.251	0.089	0.032	0.136	0.056	716,540	802,958	712,493	0.887
9	5.4	38.5	19.0	9.5	12.2	15.4	0.968	0.052	0.373	0.184	0.092	0.118	0.149	1,183,532	1,371,001	1,188,303	0.865
10	2.4	25.3	20.0	23.7	21.6	7.1	0.586	0.014	0.148	0.117	0.139	0.127	0.041	2,165,008	2,468,174	2,152,536	0.872
11	1.8	32.6	11.1	16.5	28.8	9.2	0.443	0.008	0.144	0.049	0.073	0.127	0.040	1,363,343	1,536,843	1,360,153	0.885
12	2.9	18.8	27.8	30.0	15.2	5.2	0.823	0.024	0.155	0.229	0.247	0.125	0.043	801,600	931,831	792,355	0.851
13	3.5	22.5	30.7	15.9	19.8	7.5	0.461	0.016	0.103	0.141	0.073	0.091	0.035	13,360,700	20,895,999	13,171,013	0.630
14	12.4	25.0	18.6	1.6	33.4	9.1	0.291	0.036	0.073	0.054	0.005	0.097	0.026	330,425	332,407	330,126	0.631
15	3.4	22.4	30.9	16.2	19.6	7.5	0.465	0.016	0.104	0.144	0.075	0.091	0.035	13,044,275	20,363,592	12,834,857	0.630
16	1.9	11.0	30.7	20.1	22.8	12.6	0.448	0.009	0.053	0.137	0.090	0.102	0.057	5,184,360	8,243,128	5,153,489	0.625
17	3.7	24.1	7.7	5.8	49.8	8.9	0.206	0.008	0.049	0.016	0.012	0.102	0.018	550,484	1,831,529	549,780	0.629
18	1.8	10.9	32.6	21.2	20.6	12.9	0.496	0.009	0.054	0.161	0.105	0.102	0.064	4,333,926	6,890,599	4,303,703	0.625
19	7.1	19.9	30.1	13.9	20.5	8.5	0.272	0.019	0.054	0.082	0.038	0.056	0.023	14,685,353	23,673,271	14,393,378	0.872
20	12.6	28.0	14.4	5.3	27.3	12.4	0.158	0.020	0.044	0.023	0.008	0.043	0.020	2,728,936	7,545,357	2,693,158	0.357
21	6.4	18.9	32.1	15.0	10.7	8.0	0.299	0.019	0.056	0.096	0.045	0.059	0.024	11,955,417	31,126,914	11,700,220	0.376
22	5.7	18.8	28.9	19.0	18.5	9.1	0.286	0.016	0.054	0.083	0.054	0.053	0.026	3,763,858	10,152,750	3,720,835	0.396
23	9.3	31.6	14.8	7.2	25.7	11.3	0.188	0.017	0.050	0.028	0.014	0.048	0.021	1,053,670	2,711,893	1,051,212	0.388
24	4.9	16.0	31.9	21.5	17.0	8.7	0.322	0.016	0.052	0.103	0.069	0.055	0.028	2,710,188	7,440,857	2,699,623	0.359
25	9.0	32.9	30.9	0.4	19.6	7.2	0.509	0.046	0.167	0.158	0.002	0.100	0.037	5,359,585	7,544,213	5,356,803	0.710
26	18.7	52.0	16.2	-----	6.0	7.1	0.302	0.056	0.167	0.049	-----	0.018	0.021	259,556	381,624	258,398	0.677
27	8.7	32.3	31.4	0.5	20.0	7.2	0.521	0.045	0.168	0.163	0.002	0.104	0.037	5,100,029	7,162,589	5,098,410	0.712
28	4.8	28.2	39.6	4.8	18.8	3.7	0.571	0.027	0.161	0.226	0.028	0.107	0.021	1,319,259	1,833,631	1,310,280	0.715
29	6.5	35.7	20.8	5.2	27.1	4.7	0.378	0.025	0.135	0.079	0.019	0.102	0.018	190,122	259,981	189,042	0.731
30	4.6	27.4	41.6	4.8	18.0	3.6	0.603	0.028	0.165	0.251	0.029	0.108	0.022	1,129,137	1,573,650	1,120,347	0.712
31	5.7	27.7	50.2	1.1	9.4	6.0	0.517	0.029	0.143	0.259	0.006	0.048	0.031	6,402,361	10,362,285	6,390,215	0.617
32	10.2	30.6	22.2	10.7	15.8	10.4	0.502	0.051	0.184	0.111	0.054	0.079	0.052	212,885	285,117	207,877	0.729
33	5.6	27.6	50.9	0.8	9.2	5.8	0.517	0.029	0.143	0.263	0.004	0.048	0.030	6,189,476	10,077,168	6,182,428	0.614
34	9.8	25.5	49.3	2.0	4.6	8.9	0.485	0.048	0.124	0.241	0.010	0.022	0.043	696,151	915,090	598,818	0.654
35	11.9	31.5	28.7	7.0	15.0	10.9	0.333	0.040	0.105	0.079	0.023	0.050	0.036	265,745	379,767	264,805	0.697
36	8.9	23.2	59.4	-----	0.4	8.1	0.598	0.053	0.138	0.355	-----	0.002	0.048	340,406	535,323	334,013	0.624
37	5.0	26.9	51.2	1.0	8.5	7.4	0.468	0.023	0.126	0.240	0.005	0.040	0.035	21,449,211	39,641,072	21,383,740	0.539
38	10.6	28.0	28.1	(9)	26.2	7.1	0.296	0.031	0.083	0.083	(4)	0.078	0.021	1,314,496	2,597,335	1,314,496	0.506
39	4.7	26.8	52.2	1.1	7.7	7.4	0.480	0.023	0.129	0.251	0.005	0.037	0.036	20,134,715	37,043,737	20,069,244	0.542
40	2.5	16.4	28.9	1.0	49.2	2.1	0.635	0.016	0.104	0.184	0.006	0.312	0.013	694,016	1,185,706	694,016	0.585
41	1.7	30.5	15.9	-----	48.1	3.7	0.255	0.004	0.078	0.041	-----	0.123	0.009	118,394	207,415	118,394	0.571
42	2.5	15.3	29.9	1.1	49.2	1.9	0.715	0.018	0.110	0.214	0.007	0.352	0.014	575,622	978,291	575,622	0.588
43	3.7	33.0	46.2	3.9	1.9	11.2	1.260	0.047	0.416	0.583	0.049	0.024	0.141	305,691	293,653	301,134	1.025
44	22.1	32.1	16.9	10.1	2.1	16.7	1.235	0.273	0.396	0.209	0.125	0.026	0.206	15,108	8,528	10,801	1.267
45	3.2	33.0	47.1	3.7	1.9	11.1	1.261	0.040	0.417	0.594	0.047	0.024	0.140	290,583	285,125	290,333	1.018
46	-----	30.0	40.1	19.5	6.8	3.5	0.536	-----	0.176	0.235	0.114	0.040	0.021	23,436	23,184	23,336	1.007
47	-----	22.4	15.7	37.5	19.2	5.2	0.383	-----	0.086	0.060	0.144	0.074	0.020	13,884	12,509	13,884	1.110
48	-----	34.2	53.5	9.7	-----	2.7	0.823	-----	0.281	0.440	0.080	-----	0.022	9,552	10,675	9,452	0.885

<sup>1</sup> Less than one-tenth of 1 per cent.

<sup>2</sup> Less than 1 mill.

## MINES AND QUARRIES.

## SCALE OF PRODUCTION.

Classification of operators according to value of products.—Table 28 classifies all operators whose only, or principal, product in 1909 was petroleum, according to the value of products reported.

VALUE OF PRODUCTS PER OPERATOR.	PETROLEUM ENTERPRISES: 1909			
	Number of operators.	Value of products.	Per cent distribution.	
			Number of operators.	Value of products.
Total.....	6,683	\$103,550,845	100.0	100.0
Less than \$1,000.....	1,652	900,255	24.7	0.9
\$1,000 but less than \$5,000.....	2,996	7,210,678	44.8	6.9
\$5,000 but less than \$20,000.....	1,344	13,082,807	20.1	12.5
\$20,000 but less than \$100,000.....	535	22,319,954	8.0	21.3
\$100,000 but less than \$500,000.....	130	26,465,454	1.9	25.3
\$500,000 but less than \$1,000,000.....	17	11,090,001	0.3	10.6
\$1,000,000 and over.....	9	23,475,696	0.1	22.5

This table indicates the extent to which petroleum production was controlled by a few large operators. Two-thirds of the operators who reported products to the value of less than \$5,000 each, contributed only 7.8 per cent of the total value of products for the petroleum branch of the industry. On the other hand, 9 operators, each of whom reported products valued at \$1,000,000 or over, contributed 22.5 per cent of the total value of products. More than one-half of the total value of products (58.4 per cent) was con-

tributed by 156 operators, or 2.3 per cent of the total number, each of whom reported an output valued at more than \$100,000.

Classification of operators according to the number of wage earners employed.—The following table classifies all operators who reported regular wage earners in 1909 according to the number of wage earners employed per operator.

NUMBER OF WAGE EARNERS PER OPERATOR.	PETROLEUM ENTERPRISES REPORTING REGULAR WAGE EARNERS: 1909			
	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
Total.....	3,185	24,033	100.0	100.0
1 to 5.....	2,569	4,543	80.7	18.9
6 to 20.....	470	4,784	14.8	19.9
21 to 50.....	91	2,840	2.9	11.8
51 to 100.....	27	1,759	0.8	7.3
101 to 500.....	23	4,340	0.7	18.1
Over 500.....	5	5,767	0.2	24.0

Of the 6,683 operators whose only, or principal, product was petroleum, 3,498, or more than one-half, did not report regular wage earners. The 55 operators with more than 50 wage earners each, constituted only 1.7 per cent of the total number employing regular wage earners but employed almost one-half of all wage earners reported.

## PART III.—NATURAL GAS.

The natural gas branch of the industry includes those enterprises whose principal, or only, product was natural gas. Certain enterprises in the states of Pennsylvania and West Virginia whose reports could not be classified according to the principal products are not included, although these enterprises contributed 26.5 per cent of the total production of natural gas in the United States. The enterprises which could be definitely classified and for which data are presented in Part III contributed 70.5 per cent of the total production of natural gas.<sup>1</sup>

<sup>1</sup> The difference of 3 per cent represents the natural gas product of petroleum wells.

Detailed statistics of the natural gas branch of the industry as defined here will be found in Table 51 at the end of this report.

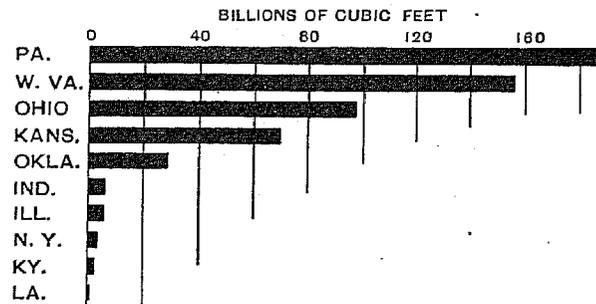
Tables 30, 31, and 32, which treat of the production and consumption of natural gas, show the disposition made of the entire amount of natural gas for which any specific disposal was reported, whether the gas was produced by enterprises engaged primarily in the production of petroleum, by those engaged primarily in gas production, or by the unclassified enterprises. The remaining tables in Part III relate only to the natural gas branch of the industry.

### PRODUCTION AND CONSUMPTION OF NATURAL GAS.

The accompanying diagram shows graphically the production of natural gas in the United States in 1909, by states.

Table 30 shows the value of natural gas sold by producers in 1909, classified according to the method of disposition, whether metered or sold at flat rate, and further classified according to the character of consumption, whether supplied for domestic use, for manufacturing or other purposes, or to other gas producers or distributing companies. The table also shows the value of gas purchased.

PRODUCTION OF NATURAL GAS: 1909.



STATE.	Gross sales.	Metered.	Sold at flat rate.	Sold direct to consumers.			Sold to other gas producers or to distributing companies.	Value of gas purchased.	Net sales.
				For domestic use.	For manufacturing purposes.	For all other purposes.			
United States .....	\$87,560,193	\$67,114,713	\$445,480	\$27,437,481	\$20,377,246	\$1,680,341	\$13,065,125	\$9,888,877	\$57,671,316
Arkansas.....	126,400	126,400	.....	11,270	37,539	1,000	76,582	.....	126,400
California.....	171,894	167,450	4,444	157,722	192	8,596	5,334	4,160	167,744
Illinois.....	563,619	556,117	7,502	241,950	\$2,320	108,833	130,516	12,713	550,906
Indiana.....	1,479,381	1,464,570	14,811	\$28,308	113,108	10,804	527,061	22,595	1,456,786
Kansas.....	6,217,730	6,121,971	95,759	1,098,673	1,379,467	19,695	3,519,895	268,545	5,948,185
Kentucky.....	480,245	476,209	4,036	414,010	63,880	2,355	.....	.....	480,245
Louisiana.....	200,666	51,707	148,959	28,743	18,455	2,069	151,399	7,200	193,466
New York.....	776,357	767,992	8,365	619,162	36,639	7,660	112,956	65,650	710,701
Ohio.....	<sup>2</sup> 18,270,378	18,270,378	(3)	11,981,686	4,668,423	150,154	1,485,819	<sup>2</sup> 5,376,075	<sup>2</sup> 12,894,303
Oklahoma.....	1,448,926	1,371,399	77,527	327,256	286,205	110,027	724,838	130,587	1,318,339
Pennsylvania.....	25,231,805	25,208,080	23,725	10,034,573	11,075,773	599,780	3,521,679	3,071,379	22,160,426
Texas.....	137,333	137,333	.....	62,946	23,583	12,527	38,277	35,313	102,020
West Virginia.....	<sup>2</sup> 12,430,133	12,371,153	<sup>2</sup> 58,980	1,614,517	2,388,631	639,074	7,766,207	<sup>2</sup> 893,664	<sup>2</sup> 11,536,469
All other states <sup>3</sup> .....	25,326	23,954	1,372	16,716	3,031	1,067	4,512	.....	25,326

<sup>1</sup> Net sales are exclusive of \$45,204, representing the value of gas obtained as a by-product of oil wells, for which the method of disposition was not reported. Of this amount, \$17,583 was reported as the value of metered gas, and \$27,621 the value of gas sold at flat rate.

<sup>2</sup> The figures for gas purchased or sold at flat rate in Ohio are included with the figures for West Virginia. The total value of gas sold at flat rate in the two states combined, however, was only \$58,980.

<sup>3</sup> Includes states as follows: Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

The net sales shown in this table represent the total value of gas sold to consumers or distributing companies, after the elimination of duplications resulting from sales among producing companies. Natural gas is sold as a rule by quantity (metered). The total

net value of the gas reported as sold at a flat rate in the United States in 1909 was only \$419,392; that is, less than 1 per cent of the total value sold.

The difference between the total sales to other producers and to distributing companies, and the total

## MINES AND QUARRIES.

value of gas purchased—\$8,176,248—represents the value of gas sold to distributing companies in 1909. The final disposition of the gas sold to such companies is outside the scope of this report, which is based on information received exclusively from producers.

Table 31 presents statistics of the natural gas reported as sold by meter. The first two columns show the total quantity sold and its value, including the

duplications resulting from purchases and sales among gas producers. In some states natural gas was supplied to producing companies from producers in other states. In order to present a complete statement of the sales in each state, it was therefore necessary to show in detail the sales and purchases of gas among producers; the last two columns of the table show net sales after subtracting all duplications.

Table 31

STATE.	GROSS SALES OF METERED GAS: 1909										
	Total. <sup>1</sup>		Sold direct to consumers.								
			For domestic use.			For manufacturing purposes.			For all other purposes.		
	Quantity. (M cu. ft.)	Value.	Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.	
Amount.				Average per M cu. ft.	Amount.		Average per M cu. ft.	Amount.		Average per M cu. ft.	
United States.....	558,904,426	\$67,114,713	111,824,617	\$27,297,154	\$0.24	244,373,222	\$20,323,354	\$0.08	25,241,715	\$1,836,036	\$0.06
Arkansas.....	1,921,215	126,490	49,176	11,279	0.24	666,957	37,539	0.06	16,000	1,000	0.06
California.....	322,599	167,450	162,459	154,307	0.95	243,192	192	1.00	67,170	7,567	0.11
Illinois.....	5,529,210	556,117	1,104,354	239,147	0.22	1,155,230	82,320	0.07	1,914,762	107,596	0.06
Indiana.....	5,266,432	1,464,570	2,962,546	816,897	0.28	749,899	110,153	0.15	116,122	10,454	0.09
Kansas.....	69,612,839	6,121,971	7,116,458	1,058,493	0.15	31,656,031	1,544,614	0.05	347,128	14,176	0.04
Kentucky.....	2,108,725	476,209	1,248,580	409,074	0.33	845,861	63,880	0.08	14,284	2,355	0.16
Louisiana.....	699,091	51,707	221,903	8,402	0.04	243,590	18,456	0.08	45,598	2,069	0.05
New York.....	3,113,906	767,992	2,653,558	616,529	0.20	199,340	36,639	0.18	23,130	1,923	0.08
Ohio.....	98,077,303	18,270,378	44,183,359	11,960,732	0.27	40,249,445	4,668,423	0.12	1,292,155	155,404	0.12
Oklahoma.....	23,055,689	1,371,399	2,136,599	316,615	0.15	10,566,142	277,354	0.03	2,339,494	109,157	0.05
Pennsylvania.....	157,209,837	25,208,090	40,427,369	10,024,146	0.25	116,446,489	11,073,798	0.10	5,846,176	591,506	0.10
Texas.....	849,306	137,333	146,791	62,946	0.43	235,828	23,583	0.10	95,163	12,527	0.13
West Virginia.....	156,038,338	12,371,153	10,003,459	1,602,343	0.16	41,358,974	2,338,368	0.06	13,009,205	619,235	0.05
All other states <sup>2</sup> .....	99,843	23,954	53,646	15,344	0.29	7,744	3,061	0.39	5,328	1,067	0.20

STATE.	GROSS SALES—continued.			METERED GAS PURCHASED.			NET SALES OF METERED GAS.	
	Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.		Quantity. (M cu. ft.)	Value.
		Amount.	Average per M cu. ft.		Amount.	Average per M cu. ft.		
United States.....	177,464,872	\$17,858,169	\$0.10	127,947,980	\$9,862,789	\$0.08	430,958,466	\$57,251,924
Arkansas.....	1,192,082	76,582	0.06	28,155	3,316	0.12	1,921,215	126,400
California.....	92,748	5,334	0.06	470,485	12,713	0.03	294,444	164,134
Illinois.....	1,354,834	127,054	0.09	128,057	22,595	0.18	5,058,725	543,404
Indiana.....	1,437,865	527,001	0.37	10,414,936	264,855	0.03	5,138,375	1,441,975
Kansas.....	30,493,222	3,504,638	0.11				59,197,903	5,857,086
Kentucky.....								
Louisiana.....	183,000	22,781	0.12				2,108,725	476,209
New York.....	833,081	112,901	0.14	329,635	65,656	0.20	699,091	51,707
Ohio.....	12,406,344	1,435,819	0.12	44,109,550	5,376,075	0.12	2,784,274	702,336
Oklahoma.....	12,963,454	668,273	0.05	5,384,892	127,887	0.02	53,987,753	12,894,303
Pennsylvania.....	24,459,803	3,518,630	0.14	45,101,627	3,061,087	0.07	22,670,797	1,243,512
Texas.....	371,614	38,277	0.10	361,129	35,313	0.10	142,108,210	22,146,993
West Virginia.....	91,606,700	7,766,207	0.08	21,619,494	893,262	0.04	488,267	102,020
All other states <sup>2</sup> .....	33,125	4,512	0.14				134,418,844	11,477,891

<sup>1</sup> Does not include 890,064,000 cubic feet of gas, valued at \$17,583, which was obtained as a by-product of oil wells, for which no disposition was reported.

<sup>2</sup> Includes states as follows: Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Table 32 shows the distribution of the natural gas which was sold at a flat rate in 1909. The distribution according to character of consumption is given in gross totals, which include the sales of gas purchased from other producers.

STATE.	Gross sales.						Total purchased.	Net sales.
	Total.	Sold direct to consumers.			Sold to other gas producers or to distributing companies.			
		For domestic use.	For manufacturing purposes.	For all other purposes.				
United States.....	\$445,480	\$140,327	\$53,892	\$44,305	\$206,956	\$26,088	\$419,392	
California.....	4,444	3,415		1,029		834	3,010	
Illinois.....	7,502	2,803		1,237	3,462		7,502	
Indiana.....	14,811	11,411	2,950	450			14,811	
Kansas.....	95,759	40,180	34,853	5,519	15,207	4,660	91,099	
Kentucky.....	4,036	4,036					4,036	
Louisiana.....	148,959	20,341			128,618	7,200	141,759	
New York.....	8,365	2,573		5,737	55		8,365	
Oklahoma.....	77,527	10,641	8,851	1,470	56,565	2,700	74,827	
Pennsylvania.....	23,725	10,427	1,975	8,274	3,049	10,292	13,433	
West Virginia.....	58,980	33,123	5,263	20,589		402	58,578	
All other states <sup>1</sup> .....	1,372	1,372					1,372	

<sup>1</sup> Exclusive of \$27,521 representing the value of gas obtained as a by-product of oil wells, for which the method of disposition was not reported.  
<sup>2</sup> Includes Ohio. Several large companies operated in one state and drew their supply in another, hence no state lines could be drawn.  
<sup>3</sup> Includes Missouri and South Dakota.

Number of gas consumers.—Table 33 shows the number of gas consumers, classified according to the character of consumption, whether for domestic, manufacturing, or other purposes.

The number of consumers shown in this table who used gas for different purposes is not entirely comparable, and the total number of consumers, therefore, is not very significant. The consumers of gas for manufacturing purposes of course use a great deal more

gas than the domestic consumers, as appears from Table 31. The class "All other" consumers is principally municipalities and other public institutions.

STATE.	NUMBER OF CONSUMERS OF NATURAL GAS: 1909			
	Total.	Domestic.	Manufacturing.	All other.
United States.....	934,002	921,416	7,922	4,664
Arkansas.....	444	420	23	1
California.....	6,839	6,828	1	10
Illinois.....	7,935	7,672	12	251
Indiana.....	34,547	34,290	151	106
Kansas.....	41,696	41,106	464	126
Kentucky.....	25,527	25,400	71	50
Louisiana.....	524	493	27	4
New York.....	20,610	20,536	71	3
Ohio.....	407,511	402,565	3,781	1,165
Oklahoma.....	12,833	12,274	130	429
Pennsylvania.....	310,601	306,637	2,320	1,644
Texas.....	2,353	2,318	19	16
West Virginia.....	61,837	60,134	849	854
All other states <sup>1</sup> .....	745	737	3	5

<sup>1</sup> Includes Colorado, Missouri, North Dakota, South Dakota, Tennessee, and Wyoming.

Gasoline.—There were nine operators in Pennsylvania who manufactured gasoline from natural gas at the wells. This method of producing gasoline is new and is still in an experimental state. Six operators reported capital amounting to \$19,774, while three operators included this item in their reports for petroleum. Only five wage earners and one salaried employee were included in the returns, as much of the labor was performed by the operators themselves and by the pumpers of the wells, who gave but a small part of their time to the manufacture of gasoline. The total quantity of gasoline reported amounted to 271,000 gallons, with a value of \$29,000. Of this value, \$12,000 was included in the value of products for the petroleum branch of the industry under the caption "All other products."

CHARACTER OF ORGANIZATION.

General summary.—Table 34 shows the relative importance of the different forms of organization in the natural gas branch of the industry in 1909.

This table shows that the corporate form of organization was by far the most important in the natural

gas industry. Almost one-half of all operators in the United States were incorporated companies, and these operators employed 87 per cent of all wage earners and contributed 92.7 per cent of the total value of products.

CHARACTER OF ORGANIZATION.	Number of operators.	Number of wage earners.		Value of products.		Per cent distribution.		
		Total.	Average per operator.	Total.	Average per operator.	Number of operators.	Number of wage earners.	Value of products.
Total.....	1,207	8,391	7	\$53,574,936	\$44,387	100.0	100.0	100.0
Individual.....	318	75	( <sup>2</sup> )	396,182	1,246	26.3	0.9	0.7
Firm.....	236	47	( <sup>2</sup> )	666,380	2,824	19.6	0.6	1.2
Corporation.....	589	7,301	12	49,647,264	84,291	48.8	87.0	92.7
Other.....	64	968	15	2,865,110	44,767	5.3	11.5	5.3

<sup>1</sup> Includes a duplication resulting from the purchase of natural gas by operators of gas wells.

<sup>2</sup> Less than 1.

MINES AND QUARRIES.

Detailed summary for incorporated and unincorporated operators.—The following table gives more detailed statistics for incorporated and unincorporated

operators in the United States, with a further division of each of these classes according to the character of their operations:

Table 35

	NATURAL GAS ENTERPRISES: 1909					
	Incorporated.			Unincorporated.		
	Total.	Engaged in—		Total.	Engaged in—	
Production only.		Production and drilling of new wells.	Production only.		Production and drilling of new wells.	
Number of operators .....	589	290	299	618	507	111
Number of wells:						
Completed Dec. 31 1909 .....	15,482	2,100	13,382	2,789	1,158	1,631
Drilled in 1909 .....	2,364		2,804	290		290
Dry .....	566		566	47		47
Abandoned .....	872	181	691	109	54	55
Persons engaged in industry:						
Proprietors and firm members .....				13,061	1,862	1,109
Salaried officers of corporations .....	407	127	280	11	4	7
Superintendents and managers .....	494	106	388	49	16	33
Clerks and other subordinate salaried employees .....	1,165	297	868	112	16	96
Wage earners, Dec. 15, 1909, or nearest representative day .....	7,301	842	6,459	1,090	40	1,050
Capital .....	\$217,634,344	\$26,918,320	\$190,716,024	\$25,463,035	\$1,678,893	\$23,784,142
Expenses of operation and development .....	\$30,364,207	\$5,980,614	\$24,383,593	\$1,961,800	\$121,688	\$1,840,172
Services:						
Salaried officers of corporations .....	\$580,719	\$118,754	\$471,965	\$33,945	\$670	\$33,275
Superintendents and managers .....	\$952,323	\$37,214	\$915,109	\$42,483	\$8,095	\$34,388
Clerks and other subordinate salaried employees .....	\$913,148	\$276,725	\$636,423	\$90,860	\$3,540	\$87,320
Wage earners .....	\$3,407,838	\$384,021	\$3,023,817	\$326,652	\$20,215	\$306,437
Supplies, fuel, and rent of power .....	\$6,030,010	\$232,991	\$5,797,019	\$457,729	\$15,028	\$441,801
Miscellaneous:						
Royalties and rent of wells .....	\$4,109,613	\$180,154	\$3,929,459	\$340,708	\$30,256	\$310,452
Contract work <sup>1</sup> .....	\$3,437,537	\$33,858	\$3,403,679	\$229,387	\$12,687	\$216,700
Rent of offices and other sundry expenses .....	\$3,588,501	\$435,323	\$3,153,178	\$300,939	\$13,453	\$287,486
Purchased gas .....	\$7,634,518	\$4,231,574	\$3,402,944	\$139,157	\$16,844	\$122,313
Per cent distribution: <sup>2</sup>						
Salaried officers of corporations .....	2.6	6.8	2.3	1.9	0.6	1.9
Superintendents and managers .....	2.9	5.0	2.7	2.3	0.7	2.0
Clerks and other subordinate salaried employees .....	4.0	15.8	3.0	5.0	3.4	5.1
Wage earners .....	15.0	22.0	14.4	17.9	19.3	17.8
Supplies, fuel, and rent of power .....	26.5	13.3	27.6	25.1	15.2	25.7
Royalties and rent of wells .....	18.1	10.3	18.7	18.7	28.9	18.1
Contract work <sup>1</sup> .....	15.1	1.9	16.2	12.6	12.1	12.6
Rent of offices and other sundry expenses .....	15.8	24.9	15.0	16.5	12.8	16.7
Average per M cubic feet: <sup>3</sup>						
Total .....	\$0.063	\$0.031	\$0.069	\$0.053	\$0.018	\$0.060
Salaried officers of corporations .....	\$0.002	\$0.002	\$0.002	\$0.001	( <sup>4</sup> ) \$0.001	\$0.001
Superintendents and managers .....	\$0.002	\$0.002	\$0.002	\$0.001	\$0.001	\$0.001
Clerks and other subordinate salaried employees .....	\$0.003	\$0.005	\$0.002	\$0.003	\$0.004	\$0.003
Wage earners .....	\$0.009	\$0.007	\$0.010	\$0.010	\$0.004	\$0.003
Supplies, fuel, and rent of power .....	\$0.017	\$0.004	\$0.019	\$0.013	\$0.008	\$0.011
Royalties and rent of wells .....	\$0.011	\$0.003	\$0.013	\$0.010	\$0.008	\$0.016
Contract work <sup>1</sup> .....	\$0.010	\$0.001	\$0.011	\$0.007	\$0.005	\$0.011
Rent of offices and other sundry expenses .....	\$0.010	\$0.008	\$0.010	\$0.009	\$0.008	\$0.010
Products:						
Total value .....	\$49,647,204	\$9,648,547	\$39,998,717	\$3,927,672	\$438,780	\$3,488,892
Natural gas:						
M cubic feet .....	360,604,718	58,022,438	304,582,280	34,171,060	5,678,566	28,492,503
Value at wells .....	\$48,937,928	\$9,569,946	\$39,367,982	\$3,736,632	\$428,234	\$3,308,398
Average per M cubic feet .....	\$0.136	\$0.171	\$0.129	\$0.109	\$0.075	\$0.116

<sup>1</sup> Includes 1,670 members of 53 cooperative associations.  
<sup>2</sup> The cost of contract work includes \$36,513, representing the compensation of part-time employees.  
<sup>3</sup> Calculations based on net expenses (total expenses exclusive of cost of purchased gas).  
<sup>4</sup> Less than 1 mill.

This table shows that the average expense per thousand cubic feet is greater in the case of corporations than in the case of unincorporated operators. This is due to the fact that such supervisory services as are performed for corporations by salaried officers or managers are often performed in the case of unincorporated enterprises, in whole or in part, by proprietors and firm members, many of whom make no salary charge for these services, but look to the profits of the enterprise for their compensation. Indeed, a considerable number of such proprietors and firm members were returned as performing manual labor at their wells, although the expenses reported included no wage payments for this labor.

Cooperative associations in Indiana.—As stated in Part I, most of the cooperative associations engaged in the production of natural gas are located in Indiana. Table 36 presents a summary of the important items relating to such associations in this state in 1909.

Table 36

	Number or amount.
Number of associations .....	51
Number of associates .....	1,666
Number of wells:	
Productive wells owned Dec. 31, 1909 .....	141
New wells drilled in 1909 .....	8
Abandoned wells .....	9
Salaried employees .....	12
Wage earners, Dec. 31, 1909 .....	7
Primary horsepower .....	207
Capital .....	\$153,645
Expenses of operation and development .....	\$19,667
Services:	
Salaries .....	\$7,392
Wages .....	\$5,315
Part-time employees .....	\$3,660
Supplies and materials .....	\$417
Royalties and rent of wells .....	\$733
Taxes .....	\$2,543
Contract work .....	\$979
Rent of offices and other sundry expenses .....	\$6,705
Products:	
Total gross value of gas sold .....	\$33,890
At flat rate .....	\$941
Metered .....	\$32,949
Quantity metered, M cubic feet .....	154,296
Gas purchased from other gas producers:	
Quantity, M cubic feet .....	2,696
Value .....	\$944
Net value .....	\$32,946
Number of consumers .....	1,870

Nearly all of the gas produced by the cooperative associations in Indiana was consumed by the members or the associates themselves; the number of consumers exceeding the number of associates by only 204. Of the total number of consumers, only three used gas for manufacturing purposes, their total consumption being 1,056,000 cubic feet. As a rule, no wage earners were employed by these associations, all the wage earners shown in the preceding table being

employed by one concern. Most of the associations had no salaried employees, the operation of gas wells requiring very little work, practically all of which was performed by the associates themselves. The amounts reported for wages and the cost of contract work represented in the main the cost of drilling new wells. There was likewise very little power used, the total amount reported being 207 horsepower. Most of the wells were operated without any power whatsoever.

SCALE OF PRODUCTION.

Classification of operators according to value of products.—Table 37 classifies according to the value of products reported all operators whose principal or only product in 1909 was natural gas.

VALUE OF PRODUCTS PER OPERATOR.	Number of operators.	Value of products.	Per cent distribution.	
			Number of operators.	Value of products.
Total.....	1,207	\$53,574,836	100.0	100.0
Less than \$1,000.....	564	170,023	46.7	0.3
\$1,000 but less than \$5,000.....	293	720,533	24.3	1.3
\$5,000 but less than \$20,000.....	182	1,918,294	15.1	3.6
\$20,000 but less than \$100,000.....	115	4,966,300	9.5	9.3
\$100,000 but less than \$500,000.....	34	7,687,433	2.8	14.3
\$500,000 but less than \$1,000,000.....	8	5,412,005	0.7	10.1
\$1,000,000 and over.....	11	32,699,743	0.9	61.0

The table shows that more than two-thirds of all operators in the United States reported a product valued at less than \$5,000 each, the total value of the output of such operators forming only 1.6 per cent of the aggregate. On the other hand, the 11 operators with an output whose value exceeded \$1,000,000 each, contributed more than three-fifths of the total value of products.

Classification of operators according to the number of wage earners employed.—The following table classifies all operators who reported regular wage earners in

1909 according to the number of wage earners employed per enterprise. Of the 1,207 enterprises whose principal product was natural gas, 868 did not report regular wage earners.

NUMBER OF WAGE EARNERS PER OPERATOR.	Number of operators.	Number of wage earners.	Per cent distribution.	
			Number of operators.	Number of wage earners.
			Total.....	339
1 to 5.....	239	440	70.5	5.2
6 to 20.....	61	682	18.0	8.1
21 to 50.....	14	429	4.1	5.1
51 to 100.....	9	748	2.7	8.9
101 to 500.....	11	2,463	3.2	29.4
Over 500.....	5	3,629	1.5	43.2

Only 339, or one-fourth, of the operators in the natural gas branch of the industry reported regular wage earners, and of these, 16 employed 72.6 per cent of the total number of wage earners reported. Therefore it is clearly to be seen that there was a large degree of concentration among the employers of labor even within the natural gas branch of the industry which excludes some of the largest operators, who could not be classified.

# PART IV.—SUPPLEMENTARY STATISTICS FOR PETROLEUM WELLS AND GAS WELLS.

## GENERAL SUMMARY.

The tabulations of the Bureau of the Census for the combined petroleum and natural gas industry and for each of its branches, have now been presented. The enterprises were classified into branches of the industry in Parts I, II, and III, according to their principal product. In Part IV the basis of classification adopted is the character of wells. Operators reporting petroleum wells only are classed in one group, those reporting gas wells only in a second, and those reporting both petroleum wells and gas wells in a third.

When new wells are drilled small quantities of natural gas are yielded by petroleum wells and vice versa. The total production of natural gas reported by operators of petroleum wells was equal to 0.2 per cent of the total value of their products, and the total value of petroleum reported by operators of gas wells was less than 0.1 per cent of the total value of their products. In the following table petroleum wells are segregated from gas wells, in so far as the reports of the operators permitted of such a segregation.

**Table 39**

	Total.	OPERATORS REPORTING—		
		Petroleum wells only.	Gas wells only.	Both petroleum wells and gas wells.
Number of operators.....	17,793	6,562	1,129	251
<b>Wells:</b>				
Completed Dec. 31, 1909.....	166,320	103,949	9,890	52,481
Oil.....	146,625	103,949		42,676
Gas.....	19,695		9,890	9,805
Drilled in 1909.....	15,412	9,119	1,561	4,732
Productive.....	13,076	7,953	1,142	3,981
Dry.....	2,336	1,166	419	751
Abandoned in 1909.....	5,871	2,346	569	2,956
Land controlled, gross acreage.....	14,072,064	3,080,537	2,716,517	8,295,010
Owned.....	686,268	407,933	124,746	163,589
Hold under lease.....	13,385,796	2,652,604	2,591,771	8,141,421
Sublet.....	1,377,226	279,612	158,749	938,865
Persons engaged in industry.....	2 62,172	33,601	7,813	20,504
Proprietors and officials.....	2 19,353	14,709	3,691	885
Proprietors and firm members.....	16,213	12,947	2,976	290
Number performing manual labor.....	2 155	2,057	73	25
Salaried officers of corporations, superintendents, and managers.....	2 3,140	1,762	715	595
Clerks and other subordinate salaried employees.....	2 2,988	1,094	797	911
Wage earners, Dec. 15, 1909, or nearest representative day.....	39,831	17,798	3,325	18,708
Average per operator.....	100.0	44.7	8.3	47.0
Per cent distribution.....	5	3	3	75
Capital.....	2 \$683,268,497	\$315,210,495	\$120,737,688	\$225,797,877
Expenses of operation and development.....	\$135,638,644	\$65,048,991	\$17,758,122	\$52,831,531
Services.....	4 \$34,333,531	\$17,736,508	\$3,366,404	\$12,824,396
Salaried officers of corporations, superintendents, and managers.....	4 \$4,848,224	\$2,373,391	\$830,661	\$1,401,808
Clerks and other subordinate salaried employees.....	4 \$2,393,657	\$741,356	\$620,390	\$868,052
Wage earners.....	\$27,091,650	\$14,621,701	\$1,915,353	\$10,554,536
Supplies, fuel, and rent of power.....	\$41,391,608	\$25,187,032	\$3,745,147	\$12,459,429
Purchased gas.....	\$9,888,877	\$918	\$5,218,435	\$4,669,524
Miscellaneous.....	\$50,024,628	\$22,124,533	\$5,428,136	\$22,878,182
Royalties and rent of wells.....	\$21,282,820	\$9,625,396	\$1,698,244	\$9,959,180
Part-time work.....	\$1,035,046	\$845,528	\$58,063	\$132,055
Contract work.....	\$15,700,864	\$7,017,854	\$1,969,529	\$6,606,222
Rent of offices and other sundry expenses.....	\$12,005,298	\$4,635,755	\$1,702,300	\$6,180,725
<b>Products:</b>				
Total value.....	6 \$185,416,684	\$85,208,213	\$26,199,386	\$74,009,085
Average per operator.....	\$23,793	\$12,985	\$23,206	\$294,857
<b>Petroleum—</b>				
Barrels (42 gallons).....	171,559,394	135,193,396	11,395	36,349,603
Value at well.....	100.0	78.3	(7)	21.2
Per cent of total quantity.....	\$117,696,529	\$84,922,999	\$16,405	\$32,757,125
<b>Natural gas—</b>				
M cubic feet.....	6 559,800,490	3,605,349	208,957,305	347,237,836
Value at well.....	100.0	0.6	37.3	62.0
Per cent of total quantity.....	6 \$67,665,397	\$192,765	\$26,160,917	\$41,251,715
Aggregate horsepower.....	1,221,969	609,308	55,042	557,619
Average per operator.....	157	93	49	2,222

<sup>1</sup> Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the different classes.

<sup>2</sup> The following numbers which could not be distributed by classes are properly credited in the total: Persons engaged in industry, 254; proprietors and officials, 68; salaried officers of corporations, superintendents, and managers, 68; clerks and other subordinate salaried employees, 186.

<sup>3</sup> Includes \$21,522,437 which could not be distributed among the different classes.

<sup>4</sup> The amounts included in "Rent of offices and other sundry expenses" for the different classes of wells and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, \$242,364; clerks and other subordinate salaried employees, \$163,859; and contract work, \$107,258.

<sup>5</sup> Includes \$114,758 value of minor products.

<sup>6</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.

<sup>7</sup> Less than one-tenth of 1 per cent.

It will be noted that the group of 251 operators who furnished combined reports for their petroleum and gas wells included the largest operators in the United States and contributed 62 per cent of the total quantity of natural gas and 21.2 per cent of the total

quantity of petroleum produced in the United States. The average number of wage earners per operator was 75, whereas operators reporting one class of wells only, employed on an average 3 wage earners each.

## MINES AND QUARRIES.

## KIND OF LABOR USED.

**Petroleum.**—A conspicuous feature of the operation of petroleum wells in the United States is the large number of operators who run their wells without regular wage earners, either with part-time employees or with contract work only, or altogether without hired labor. In the following table all enterprises reporting petroleum wells only, are classified according to the kind of labor used, by states:

STATE.	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
United States.....	6,582	3,148	2,213	317	884
California.....	320	283	11	30	5
Colorado.....	22	9	8	3	2
Illinois.....	295	256	31	4	4
Indiana.....	186	134	32	3	17
Kansas.....	118	72	37	3	6
Kentucky.....	69	33	33	3	—
Louisiana.....	23	18	1	3	1
New York.....	631	130	413	23	65
Ohio.....	1,051	483	470	35	63
Oklahoma.....	631	525	81	13	12
Pennsylvania.....	2,718	875	983	174	686
Texas.....	153	120	6	21	6
West Virginia.....	320	205	105	2	17
Wyoming.....	5	4	1	—	—
All other states <sup>1</sup> .....	2	1	1	—	—

<sup>1</sup> Includes operators distributed as follows: Michigan, 1; Missouri, 1.

Enterprises employing regular wage earners predominated in each of the states except Pennsylvania, New York, and Kentucky. More than three-fourths of the enterprises employing no hired labor and more

than half those employing contract labor only, were located in Pennsylvania.

Table 41 presents a detailed summary for operators of petroleum wells, classified according to the kind of labor used, by fields.

Although less than one-half of the enterprises employed regular wage earners, these enterprises operated nearly three-fourths of all the completed petroleum wells reported on December 31, 1909, and drilled more than five-sixths of all the productive new wells during the year 1909. They produced 95.1 per cent of the total quantity of petroleum and reported 93.1 per cent of the aggregate expenses.

The number of regular wage earners employed was 17,798, and in addition to that number, there were 2,057 proprietors who performed manual labor. The number of persons who were employed by contractors or who divided their time among several operators can not be ascertained, but an idea of the comparative importance of each class of labor may be formed from the amount expended for the same. The total amount paid to wage earners was \$14,621,761; the amount paid to employees working part time, \$845,528; and the total amount expended for contract work, \$7,017,854, which, however, included also the cost of materials and supplies furnished by contractors, as well as their profits. The latter two items in the aggregate formed 12.1 per cent of all expenses of operation and development in the United States.

PETROLEUM AND NATURAL GAS.

ENTERPRISES REPORTING PETROLEUM WELLS ONLY: 1909.

Table 41		NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.				
FIELD AND KIND OF LABOR USED.	Number of operators.	Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.
			Total.	Dry.		Total.	Number performing manual labor.			
1 United States.....	6,562	103,949	9,119	1,166	2,346	12,947	2,057	1,762	1,094	17,798
2 With regular wage earners.....	3,148	76,879	7,771	1,011	1,933	5,620	424	1,647	1,017	17,798
3 With part-time employees.....	2,213	19,724	991	115	315	5,317	559	137	71	
4 With contract work only.....	317	2,049	338	36	47	607	239	11	3	
5 Without hired labor.....	884	5,297	19	4	51	1,403	835	7	3	
FIELDS.										
6 Appalachian.....	4,208	64,589	4,243	555	823	9,683	1,747	405	192	4,547
7 With regular wage earners.....	1,517	44,390	3,169	428	585	3,694	319	348	166	4,547
8 With part-time employees.....	1,697	13,780	782	93	168	4,294	463	53	23	
9 With contract work only.....	211	1,683	277	30	40	429	206	2		
10 Without hired labor.....	783	4,731	15	4	30	1,260	759	2	1	
11 Lima-Indiana.....	776	16,160	414	59	995	1,458	197	132	53	1,005
12 With regular wage earners.....	343	10,814	319	45	852	550	32	196	42	1,005
13 With part-time employees.....	339	4,726	81	12	129	738	89	25	11	
14 With contract work only.....	29	142	14	2	7	70	19			
15 Without hired labor.....	65	478			7	94	57	1		
16 Illinois.....	295	4,797	1,220	183	77	799	29	129	70	1,106
17 With regular wage earners.....	256	4,604	1,185	177	76	679	18	125	66	1,106
18 With part-time employees.....	31	177	32	6	1	96	1	4	4	
19 With contract work only.....	4	5	3			17	1			
20 Without hired labor.....	4	11				8	2			
21 Mid-Continent.....	806	12,858	2,033	159	227	690	36	456	294	2,817
22 With regular wage earners.....	630	11,737	1,908	153	199	447	20	402	261	2,817
23 With part-time employees.....	122	962	91	3	14	172	4	49	32	
24 With contract work only.....	33	106	30	3		48	4	3	1	
25 Without hired labor.....	21	51	4		14	23	8	2		
26 Gulf.....	119	1,163	456	148	146	195	29	168	76	1,223
27 With regular wage earners.....	105	1,136	450	147	146	175	31	103	74	1,223
28 With part-time employees.....	3	9	1			3	2	2		
29 With contract work only.....	7	12	5	1		13	3	1		
30 Without hired labor.....	4	6				4	3	2	2	
31 California—Coastal and southern.....	137	1,541	111	8	29	76	13	148	113	1,710
32 With regular wage earners.....	95	1,396	110	8	37	35	4	142	110	1,710
33 With part-time employees.....	11	52			2	7		3	1	
34 With contract work only.....	26	75	1			28	5	3	2	
35 Without hired labor.....	5	18				6	4			
36 California—San Joaquin Valley.....	192	2,728	596	25	30	29		377	296	5,248
37 With regular wage earners.....	188	2,710	588	25	30	29		375	296	5,248
38 With contract work only.....	4	18	8					2		
39 Other.....	29	115	46	29	9	17	3	7		142
40 With regular wage earners.....	14	92	42	28	8	5		6		142
41 With part-time employees.....	10	18	4	1	1	8		1		
42 With contract work only.....	3	3				2		1		
43 Without hired labor.....	2	2				2		2		

Table 41—Continued.		EXPENSES OF OPERATION AND DEVELOPMENT.																						
FIELD AND KIND OF LABOR USED.	Capital.	Total.	Services.			Supplies, fuel, and rent of power.	Miscellaneous.				Per cent distribution.													
			Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.		Part-time work.	Contract work.	Royalties and rent of wells.	Rent of offices and other sundry expenses.	Salaries.	Wages.	Supplies, fuel, and rent of power.	Part-time work.										
<b>United States.</b>																								
1	\$315,210,495	\$65,048,991	\$2,373,391	\$741,356	\$14,621,761	\$25,187,950	\$845,528	\$7,017,854	\$9,625,366	\$4,635,755	4.8	22.5	38.7	1.3										
2	With regular wage earners	284,577,069	60,553,416	2,280,958	723,091	14,621,761	23,714,782	5,958,966	8,889,315	4,363,673	5.0	24.1	39.2											
3	With part-time employees	22,926,877	3,560,958	80,781	15,989		1,102,715	845,528	737,068	566,131	2.7		31.0	23.7										
4	With contract work only	2,613,828	691,069	7,712	840		269,012		320,920	70,530	1.2		38.9											
5	Without hired labor	6,091,821	243,548	3,970	586		101,441		99,420	38,181	1.9		41.7											
<b>FIELDS.</b>																								
<b>Appalachian.</b>																								
6	82,383,316	15,712,478	374,863	85,033	3,003,983	5,211,258	576,784	3,147,806	2,479,163	833,588	2.9	19.1	33.2	3.7										
7	With regular wage earners	60,938,201	12,677,059	338,257	81,643	3,003,983	4,157,430	2,389,745	2,028,418	677,578	3.3	23.7	32.5											
8	With part-time employees	15,869,527	2,420,152	33,771	3,289		815,935	576,784	544,620	331,318	1.5		33.7	23.8										
9	With contract work only	1,640,033	407,239	1,800			146,736		213,441	32,782	0.4		36.0											
10	Without hired labor	4,026,555	208,023	1,035	96		91,157		86,645	29,095	0.5		43.8											
<b>Lima-Indiana.</b>																								
11	14,494,279	2,380,444	94,979	22,524	674,627	472,715	155,215	301,090	482,475	176,819	4.9	28.3	19.9	6.5										
12	With regular wage earners	10,547,800	1,920,577	84,692	21,458	674,627	406,895	225,500	367,992	139,413	5.5	35.1	21.2											
13	With part-time employees	3,444,835	412,310	10,272	1,066		53,253	155,215	57,076	103,203	2.8		12.9	37.6										
14	With contract work only	146,355	32,425				8,117		18,514	4,473			25.0											
15	Without hired labor	355,789	15,132	15			4,450		6,807	3,801	0.1		29.4											
<b>Illinois.</b>																								
16	13,641,401	6,784,055	201,097	45,619	890,276	2,042,410	16,532	1,523,183	1,439,221	625,717	3.6	13.1	30.1	0.2										
17	With regular wage earners	13,342,411	6,591,328	197,977	44,299	890,276	1,986,662	1,485,334	1,379,636	607,144	3.7	13.5	30.1											
18	With part-time employees	286,790	187,529	3,120	1,320		54,846	16,532	33,075	59,232	2.4		28.2	8.8										
19	With contract work only	2,800	5,069				846		3,874	293			16.7											
20	Without hired labor	9,400	129				50			60			43.4											
<b>Mid-Continent.</b>																								
21	49,262,407	11,219,107	565,033	166,826	2,075,453	3,414,977	73,056	1,723,584	2,220,254	979,924	6.5	18.5	30.4	0.7										
22	With regular wage earners	46,125,775	10,678,168	529,119	156,452	2,075,453	3,241,687	1,601,450	2,135,573	935,423	6.4	19.4	30.4											
23	With part-time employees	2,673,045	427,287	29,634	10,074		117,998	73,056	96,261	63,345	0.3		27.6	17.1										
24	With contract work only	298,160	97,448	4,560	300		51,004		25,867	13,188			52.3											
25	Without hired labor	165,427	16,204	1,720			4,290		5,148	5,046	10.6		26.5											
<b>Gulf.</b>																								
26	10,455,651	3,568,260	188,966	75,148	1,177,283	1,293,021	3,037	56,208	535,650	238,947	7.4	33.0	36.2	0.1										
27	With regular wage earners	9,823,521	3,463,095	185,691	74,468	1,177,283	1,230,255		37,905	526,117	7.5	34.0	35.5											
28	With part-time employees	83,030	58,692	1,375			42,525	3,037		6,110			72.5	5.2										
29	With contract work only	42,500	43,588	700	240		19,008		18,303	2,870			45.0											
30	Without hired labor	505,700	2,885	1,200	440		635			553			22.0											
<b>California—Coastal and southern.</b>																								
31	32,478,501	5,703,653	264,174	79,081	1,563,005	2,857,367	4,916	63,411	522,013	349,686	6.0	27.4	50.1	0.1										
32	With regular wage earners	32,121,421	5,651,387	261,677	78,541	1,563,005	2,845,234		42,062	516,137	6.0	27.7	50.3											
33	With part-time employees	187,250	26,364	2,085	240		8,880	4,916	6,036	2,597			33.9	18.6										
34	With contract work only	163,180	24,839	412	300		2,680		15,313	3,072			10.7											
35	Without hired labor	6,650	1,063				784			207			73.8											
<b>California—San Joaquin Valley.</b>																								
36	110,607,640	19,299,688	670,555	267,125	5,110,912	9,721,606		201,858	1,936,533	1,389,049	4.9	26.5	50.4											
37	With regular wage earners	110,325,840	19,220,101	670,315	267,125	5,110,912	9,681,588		176,964	1,924,806	4.9	26.6	50.4											
38	With contract work only	281,800	79,587	240			40,018		24,894	13,777			50.3											
<b>Other.</b>																								
39	1,887,300	381,306	13,724		126,222	174,596	15,988	714	8,037	42,025	3.6	33.1	45.8	4.2										
40	With regular wage earners	1,453,000	351,701	13,200		126,222	165,031		7,636	39,612	3.8	35.9	46.9											
41	With part-time employees	382,000	28,624	524			9,471	15,988		326			35.1	55.9										
42	With contract work only	30,000	874				25			75			2.9											
43	Without hired labor	22,300	107				60			38			64.6											

<sup>1</sup> The total includes \$913, cost of purchased gas, distributed as follows: Appalachian field, \$34; Coastal and southern California field, \$834.

PETROLEUM AND NATURAL GAS.

PETROLEUM WELLS ONLY: 1909—Continued.

EXPENSES OF OPERATION AND DEVELOPMENT—continued.											PRODUCTS.					HORSEPOWER.		
Per cent distribu- tion—continued.			Average expense per barrel of petroleum.								Value.			Petroleum.		Aggre- gate.	Aver- age per opera- tor.	
Contract work.	Roy- alties and rent of wells.	Rent of offices and other sun- dry ex- penses.	Salaries.	Wages.	Sup- plies, fuel, and rent of power.	Part- time work.	Contract work.	Roy- alties and rent of wells.	Rent of offices and other sun- dry ex- penses.	Total.	Average per operator.	Per cent distribu- tion.	Barrels (42 gals.).	Value at well.				
														Total.	Average per barrel.			
1	10.8	14.8	7.1	\$0.023	\$0.108	\$0.186	\$0.006	\$0.052	\$0.071	\$0.034	\$35,208,213	\$12,985	100.0	135,198,396	\$34,522,899	\$0.255	699,309	83
2	9.8	14.7	7.2	0.023	0.114	0.184	0.046	0.069	0.034	78,359,456	24,892	92.0	128,637,025	28,128,478	0.220	466,801	145	
3	20.7	15.9	5.9	0.020	0.088	0.223	0.171	0.149	0.114	5,036,266	2,276	5.9	4,954,206	4,995,626	1.008	95,209	43	
4	40.4	10.2	3.2	0.010	0.088	0.318	0.379	0.083	0.026	730,863	2,306	0.8	846,620	720,599	0.851	12,494	39	
5	40.8	15.7	0.006	0.006	0.133	0.133	0.131	0.131	0.050	1,081,628	1,224	1.3	760,545	1,078,386	1.418	34,894	39	
6	20.0	15.8	5.3	0.032	0.207	0.360	0.040	0.217	0.171	0.058	22,891,754	5,440	100.0	14,494,507	22,751,365	1.571	393,799	94
7	18.8	16.0	5.3	0.036	0.260	0.359	0.207	0.175	0.059	18,202,601	11,999	79.5	11,568,749	18,099,107	1.564	296,978	177	
8	22.5	13.7	4.7	0.018	0.088	0.392	0.277	0.262	0.159	0.055	3,320,000	1,956	14.5	2,079,327	3,287,858	1.581	90,544	47
9	52.4	8.0	3.1	0.007	0.007	0.604	0.879	0.135	0.051	397,679	1,895	1.7	342,839	395,378	1.028	11,318	54	
10	41.7	14.0	0.002	0.154	0.154	0.154	0.049	0.146	0.049	971,474	1,211	4.2	593,502	969,062	1.639	22,877	42	
11	12.6	20.3	7.4	0.032	0.182	0.127	0.042	0.081	0.130	0.048	3,265,269	4,208	100.0	3,713,917	3,253,564	0.876	29,991	82
12	11.7	19.2	7.3	0.038	0.241	0.145	0.090	0.131	0.050	2,460,508	7,173	75.4	2,801,499	2,459,639	0.875	27,668	81	
13	13.8	25.0	7.8	0.014	0.066	0.066	0.193	0.071	0.129	0.040	708,848	2,091	21.7	802,962	707,948	0.882	10,465	31
14	57.1	13.8	4.1	0.018	0.233	0.233	0.531	0.129	0.038	30,777	1,061	0.9	24,899	30,327	0.860	400	15	
15	45.0	25.5	(?)	0.060	0.060	0.060	0.091	0.091	0.052	65,129	1,002	2.0	74,561	64,659	0.867	1,448	22	
16	22.5	21.2	9.2	0.017	0.063	0.144	0.001	0.108	0.102	0.044	8,896,540	30,158	100.0	14,154,197	8,886,909	0.628	17,500	39
17	22.5	20.9	9.2	0.018	0.066	0.147	0.110	0.102	0.045	8,481,889	32,132	93.3	13,526,147	8,472,165	0.628	15,771	65	
18	18.1	31.6	9.0	0.030	0.088	0.088	0.027	0.095	0.030	411,143	13,283	4.6	622,518	418,227	0.669	678	22	
19	76.4	5.8	1.1	0.200	0.200	0.200	0.914	0.069	0.013	2,650	682	(?)	4,238	2,650	0.628	8	2	
20	46.5	10.1	0.046	0.046	0.046	0.050	0.050	0.050	0.011	858	214	(?)	1,207	858	0.711	48	12	
21	15.4	19.8	8.7	0.017	0.048	0.079	0.002	0.040	0.051	0.023	15,592,168	19,245	100.0	43,473,528	15,568,539	0.358	58,776	73
22	15.0	20.0	8.8	0.016	0.050	0.078	0.038	0.051	0.022	14,948,237	23,727	94.9	41,781,935	14,931,110	0.357	55,385	88	
23	22.5	14.8	8.6	0.030	0.089	0.089	0.055	0.073	0.048	0.028	502,373	4,118	3.2	1,234,530	496,871	0.374	2,891	23
24	28.5	13.5	2.6	0.018	0.170	0.170	0.096	0.044	0.008	113,375	3,436	0.7	299,442	113,375	0.379	89	3	
25	31.8	31.1	0.063	0.063	0.063	0.076	0.075	0.076	0.075	28,183	1,342	0.2	67,621	28,182	0.417	451	21	
26	1.6	15.0	6.7	0.036	0.162	0.177	(?)	0.068	0.074	0.033	5,252,398	44,138	100.0	7,286,502	5,242,445	0.719	20,254	179
27	1.1	15.2	6.7	0.036	0.164	0.172	0.053	0.065	0.073	0.032	5,183,409	49,175	98.3	7,159,327	5,153,456	0.729	20,009	191
28	10.4	9.6	0.024	0.735	0.735	0.106	0.098	0.106	0.098	41,244	13,748	0.8	57,826	41,244	0.713	136	45	
29	42.0	6.0	4.3	0.018	0.333	0.333	0.358	0.056	0.037	36,298	5,181	0.7	51,190	36,298	0.708	87	12	
30	19.2	2.0	0.035	0.035	0.035	0.039	0.039	0.039	0.039	11,477	2,869	0.2	18,156	11,477	0.632	29	6	
31	1.1	9.2	6.1	0.031	0.143	0.261	(?)	0.006	0.048	0.032	6,539,638	49,924	100.0	10,943,420	6,820,769	0.623	18,281	133
32	0.7	9.1	6.1	0.031	0.145	0.263	0.004	0.048	0.032	6,744,603	70,996	98.6	10,806,984	6,729,529	0.622	17,969	189	
33	22.9	9.9	6.8	0.042	0.157	0.157	0.089	0.109	0.047	38,699	3,518	0.6	55,351	38,519	0.696	139	12	
34	61.6	12.4	0.009	0.035	0.035	0.200	0.040	0.040	0.040	52,932	2,056	0.8	78,395	52,679	0.680	150	6	
35	19.5	6.8	0.167	0.167	0.167	0.044	0.015	0.044	0.015	3,405	681	(?)	4,690	3,045	0.649	7	1	
36	1.0	10.0	7.2	0.023	0.125	0.238	0.005	0.047	0.034	22,143,227	115,329	100.0	46,826,778	22,977,756	0.541	58,028	363	
37	0.9	10.0	7.2	0.023	0.126	0.238	0.004	0.047	0.034	22,051,906	117,297	99.6	46,693,064	21,993,436	0.540	57,748	367	
38	31.8	17.3	0.8	0.002	0.294	0.294	0.186	0.103	0.005	91,321	22,830	0.4	133,714	84,321	0.631	280	79	
39	0.2	2.1	11.0	0.043	0.490	0.553	0.051	0.002	0.025	0.133	327,227	11,284	100.0	315,637	322,870	1.022	2,769	95
40	2.2	11.3	0.044	0.422	0.551	0.810	1.367	0.028	0.132	206,305	21,879	93.6	299,321	301,755	1.008	2,277	163	
41	1.1	8.1	0.045	0.810	0.810	0.023	0.198	0.023	0.198	13,969	1,396	4.3	11,695	13,969	1.094	492	49	
42	81.7	8.6	6.9	0.006	0.006	0.006	0.183	0.015	0.015	5,961	1,954	1.8	3,903	5,954	1.909	59	17	
43	35.5	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	1,102	551	0.3	718	1,102	1.535	49	20	

\* Less than 1 mill.

\* Less than one-tenth of 1 per cent.

## MINES AND QUARRIES.

Natural gas.—In the following table all enterprises reporting natural gas wells only are classified according to the kind of labor used in 1909, by states:

STATE.	OPERATORS OF NATURAL GAS WELLS ONLY: 1909					STATE.	OPERATORS OF NATURAL GAS WELLS ONLY: 1909				
	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.		Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
United States.....	1,129	286	202	128	513	Missouri.....	9	.....	4	3	2
Arkansas.....	3	1	2	.....	6	New York.....	74	22	12	11	29
California.....	11	2	2	.....	1	Ohio.....	109	40	18	10	41
Illinois.....	7	4	.....	1	1	Oklahoma.....	40	22	8	3	7
Indiana.....	454	48	45	47	318	Pennsylvania.....	243	74	63	30	76
Kansas.....	62	31	26	12	13	South Dakota.....	3	.....	.....	.....	3
Kentucky.....	15	5	3	3	4	West Virginia.....	66	31	17	9	9
Louisiana.....	6	2	1	1	2	All other states <sup>1</sup> .....	7	4	1	.....	2

<sup>1</sup> Includes enterprises distributed as follows: Colorado, 1; North Dakota, 1; Tennessee, 1; Texas, 2; and Wyoming, 2.

Only one-fourth (25.3 per cent) of the enterprises reporting natural gas wells only employed regular wage earners, and almost half (45.4 per cent) employed no hired labor whatever. In Indiana, where the production of gas is rapidly declining, the largest number of enterprises was reported as employing no hired labor. Table 43 presents a detailed summary for enterprises

reporting natural gas wells, classified according to the character of labor employed.

Enterprises employing regular wage earners reported 72.2 per cent of wells, and 90.3 per cent of the total value of products; those employing no hired labor, on the other hand, reported only 11.8 per cent of the wells and 3.5 per cent of the value of products.

Table 43

	Total.	Employing regular wage earners.	Employing part-time labor.	Employing contract labor only.	Employing no hired labor.
Number of operators.....	1,129	286	202	128	513
Wells:					
Completed Dec. 31, 1909.....	9,800	7,145	991	587	1,167
Drilled in 1909—					
Productive.....	1,142	887	114	134	7
Dry.....	419	320	20	78	1
Abandoned in 1909.....	560	406	61	42	60
Persons engaged in industry:					
Proprietors and firm members.....	2,976	804	584	316	1,272
Salaried officers of corporations, superintendents, and managers.....	715	448	100	81	88
Clerks and other subordinate salaried employees.....	797	707	38	14	38
Wage earners, Dec. 15, or nearest representative day.....	3,325	3,325	.....	.....	.....
Capital.....	\$120,737,688	\$110,843,203	\$4,705,251	\$2,283,671	\$2,905,563
Expenses of operation and development.....	\$17,758,122	\$16,090,115	\$775,165	\$468,473	\$424,369
Services—					
Salaried officers of corporations, superintendents, and managers.....	\$830,661	\$704,993	\$58,914	\$32,298	\$34,456
Clerks and other subordinate salaried employees.....	\$620,390	\$590,422	\$13,635	\$5,620	\$10,713
Wage earners.....	\$1,915,353	\$1,915,353	.....	.....	.....
Supplies, fuel, and rent of power.....	\$3,745,147	\$3,430,983	\$190,177	\$88,775	\$25,212
Purchased gas.....	\$5,218,435	\$4,890,277	\$48,520	\$3,907	\$275,731
Miscellaneous—					
Royalties and rent of wells.....	\$1,698,244	\$1,455,050	\$137,694	\$64,214	\$41,284
Part-time work.....	\$58,063	.....	\$58,063	.....	.....
Contract work.....	\$1,969,529	\$1,509,779	\$220,588	\$239,162	.....
Rent of offices and other sundry expenses.....	\$1,702,300	\$1,593,258	\$47,574	\$24,497	\$36,971
Products:					
Total value <sup>1</sup> .....	\$26,199,386	\$23,671,094	\$1,157,797	\$448,438	\$922,057
Natural gas—					
M cubic feet <sup>1</sup> .....	208,957,305	171,276,329	22,617,516	6,276,334	8,787,126
Value at wells <sup>1</sup> .....	\$26,160,917	\$23,637,842	\$1,154,298	\$446,741	\$922,036
Aggregate horsepower.....	55,042	53,614	881	355	182

<sup>1</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.

## ROYALTIES.

The total amount of royalties reported by operators of producing enterprises in the petroleum and natural gas industry was \$21,282,820. In many cases, however, royalties were reported by operators who owned some land and leased some, and in such cases no comparisons can be made between the amount of royalties and the value of the products; in other cases royalties were reported by operators who leased land which

produced both oil and gas, and as a consequence the royalties could not be classified according to the character of the product.

Petroleum.—In Table 44 the royalties reported by the operators of petroleum wells on leased land only, and the value of the products of such wells are shown by fields, together with the percentage which royalties constituted of the value of products of such enterprises.

**Table 44**

FIELD.	PETROLEUM WELLS OPERATED ON LEASED LAND ONLY: 1909		
	Value of products.	Royalties.	
		Amount.	Per cent ratio to value of products.
United States.....	\$41,048,626	\$6,447,968	15.7
Appalachian.....	15,401,328	2,005,145	13.0
Lima-Indiana.....	2,567,923	408,580	15.9
Illinois.....	7,125,465	1,184,364	16.6
Mid-Continent.....	9,804,154	1,425,288	14.5
Gulf.....	1,406,989	256,886	18.3
California:			
Coastal and southern.....	1,019,732	170,441	16.7
San Joaquin Valley.....	3,712,061	995,957	26.8
Other.....	10,974	1,307	11.9

leased land only, and the value of the products of such wells by states, together with the percentage which royalties constituted of the value of products of such enterprises.

**Table 45**

STATE.	GAS WELLS OPERATED ON LEASED LAND ONLY: 1909		
	Value of products.	Royalties.	
		Amount.	Per cent ratio to value of products.
United States.....	\$3,787,321	\$1,198,883	31.7
Illinois.....	275,254	19,760	7.2
Indiana.....	528,597	51,066	9.6
Kansas.....	1,153,026	151,227	13.1
Kentucky.....	233,996	13,203	5.6
New York.....	458,396	32,890	7.2
Ohio.....	1,933,664	268,493	13.9
Oklahoma.....	563,551	29,019	5.1
Pennsylvania.....	2,094,865	240,859	11.5
West Virginia.....	1,423,531	378,467	26.6
All other states.....	102,441	13,969	13.6

<sup>1</sup> Includes Arkansas, California, Colorado, Louisiana, and Missouri.

The total value of products of operators reporting petroleum wells only, as shown in Table 39, was \$35,208,213, and the royalties paid by these operators amounted to \$9,625,396. The value of products reported by such operators operating on leased land only, amounted to \$41,048,626, and the royalties paid by these operators amounted to \$6,447,968. These royalties constituted more than two-thirds of the total royalties paid, and the proportion that they constituted of the value of products can be accepted as the normal ratio for all leased land.

Natural gas.—Table 45 shows the royalties reported by operators of natural gas wells who operated on

The value of products of gas enterprises operated upon leased land only, constituted about one-third of the value of products returned by all operators reporting gas wells only, yet the royalties were more than two-thirds of the total. West Virginia showed the largest percentage of value of products paid as royalties, while Oklahoma showed the smallest.

DEPTH OF WELLS.

Tables 46 and 47 present statistics for depth of wells. In Table 46, for petroleum wells, the classification is by fields. In Table 47, for natural gas wells, the classification is by states.

**Table 46**

FIELD.	DEPTH OF PETROLEUM WELLS (FEET).	
	Shallowest.	Deepest.
Appalachian.....	25	5,734
Lima-Indiana.....	125	2,833
Illinois.....	98	2,003
Mid-Continent.....	50	2,400
Gulf.....	200	2,850
California:		
Coastal and southern.....	125	4,310
San Joaquin Valley.....	200	5,575
Other.....	120	3,725

**Table 47**

STATE.	DEPTH OF GAS WELLS (FEET).	
	Shallowest.	Deepest.
Arkansas.....	1,125	3,175
California.....	89	3,000
Colorado.....	2,000	2,000
Illinois.....	207	1,615
Indiana.....	400	1,300
Kansas.....	160	2,200
Kentucky.....	216	2,800
Louisiana.....	89	1,140
Missouri.....	250	750
New York.....	300	3,000
North Dakota.....	178	190
Ohio.....	150	3,445
Oklahoma.....	450	2,600
Pennsylvania.....	237	3,600
South Dakota.....	1,300	1,430
Texas.....	1,065	1,725
West Virginia.....	700	3,950
Wyoming.....	572	1,100

PART V.—GENERAL STATISTICS: 1909.

The principal statistics obtained by the census of petroleum and natural gas wells in 1909 are given in greater detail in Tables 48, 49, 50, 51, and 52.

Table 48 presents a more complete summary than did Table 4 for the producing enterprises of the industry, classified according to the principal product, and contains a column showing the detailed figures for unclassified enterprises.

Tables 49, 50, and 51 classify the enterprises by production only, and production combined with the drilling of new wells. These tables do not include the statistics of any wells operated by the state penal institutions, by municipalities or by eleemosynary institutions, nor wells for which the operators failed to furnish full reports as to capital, expenses, employees, etc. The value of products of enterprises thus omitted amounted to \$2,300,000, of which \$1,500,000 was the value of petroleum and \$800,000 the value of natural gas. These totals represent only 1.3 per cent and 1.4

per cent of the total value of petroleum products and of the net value of natural gas products, respectively.

Table 49 presents data covering the operations of all producing enterprises, by fields and states.

Table 50 gives data for enterprises of which the principal product was petroleum, by fields and states.

Table 51 covers the enterprises the principal product of which was natural gas, by states. In Tables 50 and 51 the operators have been classified, therefore, according to their prevailing product. There were a few operators, however, in Pennsylvania and West Virginia whose reports combined a number of distinct enterprises of each class, making it impossible to segregate the operations of the several enterprises according to the character of each. These enterprises are covered in Table 48 and are given in the combined total in Table 49.

Table 52 gives data, by states, for the nonproducing enterprises.

SUMMARY FOR OPERATORS, CLASSIFIED ACCORDING TO PRINCIPAL PRODUCT: 1909.

Table 48	Total.	PRINCIPAL PRODUCT.		
		Petroleum.	Natural gas.	Unclassified.
Number of operators.....	17,793	6,636	1,207	99
Wells:				
Completed Dec. 31, 1909.....	168,320	129,422	18,271	18,627
Oil.....	148,625	128,771	2,424	18,420
Gas.....	19,695	651	15,847	2,207
Drilled in 1909.....	15,412	11,431	2,654	1,327
Productive.....	13,676	9,821	2,041	1,174
Dry.....	2,336	1,590	613	133
Abandoned in 1909.....	5,571	4,147	921	743
Land controlled, acres:				
Net.....	12,694,838	4,649,790	4,567,190	4,677,838
Owned.....	686,268	455,288	148,573	82,197
Held under lease.....	12,008,570	3,594,502	4,418,617	3,995,741
Sublet.....	1,377,296	939,794	161,504	275,628
Gross.....	14,672,664	4,989,524	4,728,694	4,823,436
Persons engaged in industry.....	62,172	40,245	13,690	7,953
Proprietors and officials.....	19,358	14,990	4,222	273
Proprietors and firm members.....	16,213	13,694	3,061	25
Number performing manual labor.....	2,155	2,068	82	5
Salaried officers of corporations.....	1,153	641	412	60
Superintendents and managers.....	1,987	1,285	543	119
Clerks and other subordinate salaried employees.....	2,968	1,222	1,277	363
Wage earners, Dec. 15, 1909, or nearest representative day.....	39,831	24,603	8,391	7,407
Men 16 years of age and over—				
Engineers, firemen, mechanics, etc.....	27,063	19,153	2,262	5,708
All other employees.....	12,768	4,896	6,129	1,699
Number of wage earners employed on the 15th day of each month:				
January.....	34,162	21,755	5,660	6,737
February.....	33,521	21,779	5,143	6,599
March.....	33,920	21,939	5,128	6,853
April.....	34,808	22,363	5,507	6,973
May.....	35,854	22,697	6,111	7,136
June.....	36,728	22,541	7,048	7,339
July.....	37,368	23,090	7,943	7,333
August.....	37,549	22,789	7,963	7,498
September.....	38,098	22,611	7,519	7,968
October.....	38,121	23,513	8,369	7,966
November.....	38,121	23,187	8,727	8,013
December.....	38,562	23,742	8,357	7,463

<sup>1</sup> Exclusive of duplications in the case of certain operators who sent in two or more reports. These duplications have not been eliminated from the figures for the several classes.

<sup>2</sup> The following numbers which could not be distributed by classes are properly distributed in the total: Persons engaged in industry, 264; proprietors and officials, 66; salaried officers of corporations, 28; superintendents and managers, 40; clerks and other subordinate salaried employees, 186.

<sup>3</sup> The total includes 11 boys under 16 years of age distributed as follows: Petroleum, 8; natural gas, 3.

## MINES AND QUARRIES.

SUMMARY FOR OPERATORS, CLASSIFIED ACCORDING TO PRINCIPAL PRODUCT: 1909—Continued.

Table 48—Continued.	Total.	PRINCIPAL PRODUCT.		
		Petroleum.	Natural gas.	Unclassified.
Capital.....	<sup>1</sup> \$683,268,497	\$360,422,056	\$243,097,379	\$58,226,625
Expenses of operation and development.....	\$135,638,644	\$79,745,844	\$32,326,067	\$23,563,733
Services.....	<sup>2</sup> \$34,333,531	\$22,597,940	\$6,057,968	\$5,271,400
Salaried officers, superintendents, and managers.....	<sup>2</sup> \$4,545,224	\$2,775,808	\$1,319,470	\$510,582
Clerks and other subordinate salaried employees.....	<sup>2</sup> \$2,393,657	\$984,392	\$1,004,008	\$241,398
Wage earners.....	\$27,091,650	\$18,837,740	\$3,734,490	\$4,519,420
Supplies, fuel, and rent of power.....	\$51,280,485	\$29,114,627	\$14,261,414	\$7,904,444
Supplies.....	\$39,947,013	\$28,452,233	\$6,334,762	\$5,160,018
Fuel and rent of power.....	\$1,444,595	\$658,448	\$152,977	\$633,170
Cost of purchased gas.....	\$9,888,877	\$3,946	\$7,773,675	\$2,111,256
Miscellaneous.....	<sup>2</sup> \$50,024,628	\$28,036,277	\$12,006,685	\$10,387,889
Royalties and rent of wells.....	\$21,282,820	\$12,509,181	\$4,450,321	\$4,323,318
Taxes.....	\$2,576,986	\$1,004,164	\$1,062,643	\$477,827
Contract work.....	<sup>2</sup> \$16,736,510	<sup>2</sup> \$9,380,820	<sup>2</sup> \$3,666,924	<sup>2</sup> \$3,581,507
Rent of offices and other sundry expenses.....	<sup>2</sup> \$9,428,312	\$5,142,112	\$2,826,797	\$2,005,237
Per cent of total:				
Services.....	25.3	28.3	18.8	22.4
Supplies.....	37.8	36.5	44.1	33.5
Contract work.....	12.3	11.8	11.3	15.2
Other miscellaneous.....	24.5	23.4	25.8	28.9
Products:				
Total value <sup>4</sup> .....	<sup>5</sup> \$185,416,684	\$104,550,845	\$53,574,936	\$27,290,903
Average per operator.....	\$23,793	\$15,644	\$44,387	\$524,825
Petroleum—				
Barrels (42 gallons).....	171,559,394	162,581,408	791,529	8,186,457
Per cent of total quantity.....	100.0	94.8	0.5	4.8
Value at well.....	\$117,696,529	\$103,600,756	\$878,312	\$13,217,461
Natural gas—				
M cubic feet.....	<sup>6</sup> 559,800,490	16,577,637	394,775,787	148,447,066
Per cent of total quantity.....	100.0	3.0	70.5	26.5
Value at well.....	<sup>6</sup> \$67,605,397	\$857,640	\$62,674,560	\$14,073,197
Primary power, aggregate horsepower.....	1,221,969	730,664	151,363	339,942
Average per operator.....	157	109	125	6,537
Owned, total horsepower.....	1,221,809	730,634	151,233	339,942
Steam engines—				
Number.....	36,928	25,554	606	10,768
Horsepower.....	746,658	435,120	61,321	250,217
Gas or gasoline engines—				
Number.....	21,782	16,106	1,498	4,158
Horsepower.....	475,151	295,514	89,912	89,725
Electric horsepower rented from other enterprises.....	180	30	130	.....
Electric motors run by current generated by the enterprise using:				
Number.....	454	7	38	409
Horsepower.....	8,589	112	687	7,790

<sup>1</sup> Includes \$21,522,437 which could not be distributed among the different classes.<sup>2</sup> The amounts included in "Rent of offices and other sundry expenses" for the different classes and properly distributed in the total for all wells are as follows: Salaried officers of corporations, superintendents, and managers, \$242,364; clerks and other subordinate salaried employees, \$163,859; taxes, \$32,352; and contract work, \$107,259.<sup>3</sup> The total includes \$1,035,646 paid to part-time employees, distributed as follows: Petroleum, \$356,935; natural gas, \$36,513; unclassified, \$92,198. See also note 2.<sup>4</sup> Includes \$114,758, value of minor products.<sup>5</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.

PETROLEUM AND NATURAL GAS.

PETROLEUM AND NATURAL GAS—DETAILED STATISTICS OF PRODUCING ENTERPRISES, BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909.

FIELD, STATE, AND CHARACTER OF OPERATIONS.		Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.									
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.					Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.		
				Total.	Dry.			Total.	Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Engineers, firemen, mechanics, etc.	All other employees.
									Total.	Performing manual labor.						
1	United States	17,793	166,320	15,412	2,338	5,871	*62,172	*19,353	16,213	2,155	*1,153	*1,987	*2,988	39,831	27,063	*12,768
2	Production only	5,206	56,265	1	1	1,401	16,528	11,541	10,743	1,562	318	480	592	4,395	3,261	1,134
3	Production and drilling of new wells	2,736	110,055	15,411	2,335	4,470	45,390	7,744	5,470	593	807	1,467	2,210	35,436	23,802	11,634
FIELDS.																
4	Appalachian <sup>4</sup>	4,829	109,685	7,740	1,128	2,573	33,811	11,964	10,752	1,816	422	790	1,510	20,337	12,884	*7,453
5	Production only	3,290	35,552			329	10,273	7,544	7,286	1,318	86	172	346	2,383	1,522	861
6	Production and drilling of new wells	1,539	74,133	7,740	1,128	2,244	23,538	4,420	3,466	498	336	618	1,164	17,954	11,362	6,592
7	Lima-Indians	1,275	23,132	744	141	2,258	5,981	3,875	3,532	216	181	162	131	1,975	1,619	356
8	Production only	1,052	13,031			854	3,402	2,643	2,455	178	98	90	69	690	594	96
9	Production and drilling of new wells	193	10,051	744	141	1,404	2,579	1,232	1,077	38	83	72	62	1,285	1,025	260
10	Illinois	323	10,918	2,537	384	205	5,188	1,004	817	22	51	136	125	4,059	3,281	778
11	Production only	190	1,219			11	543	360	331	10	15	14	20	163	153	10
12	Production and drilling of new wells	133	9,699	2,537	384	194	4,645	644	486	12	36	122	105	3,896	3,128	768
13	Mid-Continent	994	16,689	3,047	430	581	6,655	1,421	769	44	228	424	504	4,730	3,030	1,700
14	Production only	512	5,269			184	1,465	676	462	25	78	136	114	675	675	100
15	Production and drilling of new wells	482	11,420	3,046	429	397	5,190	745	307	19	150	288	390	4,055	2,455	1,600
16	Gulf	128	1,351	544	170	173	1,981	313	198	39	43	77	97	1,566	1,091	*475
17	Production only	34	97			2	258	120	101	16	8	11	10	128	95	33
18	Production and drilling of new wells	94	1,254	544	170	171	1,723	198	97	23	35	66	87	1,438	996	442
19	California-Coastal and southern	144	1,568	111	8	41	2,086	234	83	13	56	95	114	1,738	1,271	467
20	Production only	85	654			16	217	104	79	12	7	18	14	89	89	10
21	Production and drilling of new wells	59	914	111	8	25	1,869	130	4	1	49	77	100	1,639	1,182	457
22	California—San Joaquin Valley <sup>5</sup>	198	2,748	597	26	30	5,995	417	30		137	250	309	5,269	3,778	*1,491
23	Other fields <sup>6</sup>	51	229	92	49	10	221	52	32	5	7	13	12	157	109	48
STATES.																
24	California <sup>5</sup>	342	4,316	708	34	71	8,081	651	113	13	193	345	423	7,007	5,049	*1,958
25	Colorado <sup>7</sup>	22	75	39	28	9	149	23	16	3	2	5		126	85	41
26	Production only <sup>7</sup>	16	17			1	21	15	12	3	1	2		6	4	2
27	Production and drilling of new wells	6	58	39	28	8	128	8	4		1	3		120	81	39
28	Illinois	323	10,918	2,537	384	205	5,188	1,004	817	22	51	136	125	4,059	3,281	778
29	Production only	130	1,219			11	543	380	331	10	15	14	20	1,059	1,53	10
30	Production and drilling of new wells	193	9,699	2,537	384	194	4,645	644	486	12	36	122	105	3,896	3,128	768
31	Indiana	644	10,373	382	90	1,762	3,950	2,518	2,277	24	141	100	87	1,345	1,034	311
32	Production only	569	4,314			549	1,953	1,544	1,418	23	71	55	34	375	297	78
33	Production and drilling of new wells	75	6,059	382	90	1,213	1,997	974	859	2	70	45	53	970	737	233
34	Kansas	217	3,402	597	190	349	1,743	300	178	12	37	85	141	1,302	397	905
35	Production only	143	1,616			131	318	188	119	8	18	31	20	130	108	22
36	Production and drilling of new wells	74	1,786	597	190	218	1,425	132	59	4	19	54	121	1,172	289	883
37	Kentucky	85	1,109	143	56	32	336	157	123	10	15	19	23	206	136	70
38	Production only	55	501			16	153	94	81	4	5	8	11	48	38	10
39	Production and drilling of new wells	30	608	143	56	16	233	63	42	6	10	11	12	158	98	60
40	Louisiana <sup>8</sup>	31	245	112	30	38	682	121	72	1	25	24	38	523	355	*168
41	New York	708	11,342	450	19	73	2,087	1,657	1,582	179	34	41	56	374	291	83
42	Production only	559	7,030			24	1,440	1,288	1,264	127	10	14	20	132	118	14
43	Production and drilling of new wells	149	4,312	450	19	49	647	369	318	52	24	27	36	242	173	69
44	Ohio	1,195	35,067	2,391	539	1,436	9,312	2,863	2,408	281	170	285	552	5,897	3,263	*2,634
45	Production only	786	11,397			362	3,226	1,770	1,529	198	60	81	274	1,182	477	705
46	Production and drilling of new wells	409	23,670	2,391	539	1,074	6,086	1,093	779	83	110	204	278	4,715	2,786	1,929
47	Oklahoma	711	12,113	2,203	186	155	4,439	1,013	499	23	187	327	360	3,066	2,336	730
48	Production only	323	3,147			40	1,022	422	266	11	57	99	94	506	432	74
49	Production and drilling of new wells	388	8,966	2,203	186	115	3,417	591	233	12	130	228	266	2,560	1,904	656
50	Pennsylvania	3,030	59,780	3,344	349	863	15,451	7,515	7,087	1,482	147	281	539	7,397	4,317	*3,080
51	Production only	2,147	22,662			185	5,991	4,901	4,811	1,102	25	65	54	1,036	824	113
52	Production and drilling of new wells	883	37,118	3,344	349	678	9,460	2,614	2,276	380	122	216	485	6,361	3,393	2,968
53	Texas <sup>9</sup>	159	2,116	640	189	208	1,745	302	213	47	21	63	60	1,383	1,026	*357
54	Production only <sup>9</sup>	69	576			1	15	235	112	21	4	13	1	105	91	14
55	Production and drilling of new wells <sup>9</sup>	90	1,540	639	188	193	1,510	173	106	26	17	50	59	1,278	935	343
56	West Virginia	442	15,146	1,774	216	665	8,606	1,129	807	56	96	226	384	7,093	5,462	1,631
57	Production only	256	3,729			47	912	590	538	43	13	39	22	300	262	38
58	Production and drilling of new wells	186	12,417	1,774	216	618	7,694	539	269	13	83	187	362	6,793	5,200	1,593
59	All other states <sup>9</sup>	33	317	92	26	5	99	32	16	2	6	10	14	53	31	22
60	Production only	16	76			1	29	15	11		2	2	4	10	9	1
61	Production and drilling of new wells	17	241	92	26	4	70	17	5		4	8	10	43	22	21

<sup>1</sup> Exclusive of duplications in the case of certain operators who reported enterprises in two or more fields or states. These duplications have not been eliminated from the figures for the different classes.

<sup>2</sup> The following numbers which can not be distributed by fields and states are properly distributed in the total: Aggregate, 254; total, 68; salaried officers of corporations, 28; superintendents and managers, 40; and clerks and other subordinate salaried employees, 186. The fields affected are: Appalachian, Lima-Indians, Illinois, Mid-Continent, Gulf, California-Coastal and southern, and California-San Joaquin Valley. The states affected are: California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia.

<sup>3</sup> Includes 11 boys under 16 years of age distributed as follows: Appalachian field, 3; Gulf field, 7; California-San Joaquin Valley field, 1; California, 1; Louisiana, 1; Ohio, 2; Pennsylvania, 1; Texas, 6.

<sup>4</sup> Excludes Tennessee in order to avoid disclosing individual operations.

<sup>5</sup> "Production only" and "Production and drilling of new wells" not shown separately, in order to avoid disclosing individual operations.

<sup>6</sup> Includes Tennessee in order to avoid disclosing individual operations. See also note 5.

<sup>7</sup> Excludes 1 operator of a gas well in order to avoid disclosing individual operations.

<sup>8</sup> The total excludes 4 operators of gas wells, of whom 1 is classified as "Production only" and 3 are classified as "Production and drilling of new wells," in order to avoid disclosing individual operations.

<sup>9</sup> Includes operators distributed as follows: Arkansas, 3; Colorado, 1 (operator of gas well); Michigan, 1; Missouri, 12; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4 (operators of gas wells); and Wyoming, 7.

MINES AND QUARRIES.

PETROLEUM AND NATURAL GAS—DETAILED STATISTICS OF PRODUCING

Table 49—Continued.		EXPENSES OF OPERATION AND DEVELOPMENT.									
		FIELD, STATE, AND CHARACTER OF OPERATIONS.	Capital (dolls.).	Aggregate (dolls.).	Services.			Supplies, fuel, and rent of power.			
					Total (dolls.).	Salaried officers of corporations, superintendents, and managers (dolls.).	Clerks and other subordinate salaried employees (dolls.).	Wage earners (dolls.).	Total (dolls.).	Supplies and materials (dolls.).	Fuel and rent of power (dolls.).
1	United States.....	2 683,268,497	135,638,644	34,333,531	4,848,224	2,393,657	27,091,650	51,280,485	39,947,013	1,444,595	9,888,877
2	Production only.....	104,311,432	14,346,947	3,964,107	700,557	389,723	2,873,827	5,986,546	1,566,404	171,436	4,248,706
3	Production and drilling of new wells.....	571,267,551	121,291,697	29,963,201	3,905,303	1,840,075	24,217,823	45,293,939	38,380,609	1,273,159	5,640,171
FIELDS.											
4	Appalachian <sup>5</sup> .....	344,007,846	68,498,187	14,691,643	1,899,795	1,151,210	11,640,638	25,851,013	15,715,105	989,121	9,146,787
5	Production only.....	64,228,673	9,005,030	1,924,335	267,806	291,510	1,365,019	4,856,504	822,603	96,450	3,937,451
6	Production and drilling of new wells.....	279,779,173	59,493,157	12,767,308	1,631,989	859,700	10,275,619	20,994,509	14,892,502	892,671	5,209,336
7	Lima-Indiana.....	27,934,429	4,359,494	1,539,091	236,609	74,798	1,227,684	1,020,436	649,555	88,299	282,582
8	Production only.....	11,749,874	1,667,199	579,662	85,238	25,773	468,651	442,436	153,392	14,667	274,377
9	Production and drilling of new wells.....	16,184,555	2,692,295	959,429	151,371	49,025	759,033	578,000	496,163	73,632	8,205
10	Illinois.....	34,366,518	13,476,053	3,062,669	337,189	99,109	2,626,371	4,126,948	4,075,483	38,752	12,713
11	Production only.....	2,475,656	433,690	135,823	22,844	6,705	106,274	50,318	40,363	9,955	.....
12	Production and drilling of new wells.....	31,890,862	13,042,363	2,926,846	314,345	92,404	2,520,097	4,076,630	4,035,120	28,797	12,713
13	Mid-Continent.....	102,990,290	18,350,832	4,419,995	921,052	349,610	3,149,333	5,622,585	5,113,896	73,244	435,445
14	Production only.....	17,057,176	1,879,662	754,311	190,451	45,578	518,282	295,977	337,003	22,257	36,717
15	Production and drilling of new wells.....	85,933,114	16,471,170	3,665,684	730,601	304,032	2,631,051	5,326,608	4,876,893	50,987	398,728
16	Gulf.....	16,692,316	5,039,888	2,007,907	230,252	195,659	1,581,996	1,662,711	1,559,214	96,297	7,200
17	Production only.....	1,498,138	214,157	123,113	21,812	95,161	6,140	39,197	33,901	5,296	.....
18	Production and drilling of new wells.....	15,194,178	4,825,731	1,884,794	208,440	189,519	1,486,835	1,623,514	1,525,313	91,001	7,200
19	California-Coastal and southern.....	32,684,916	5,800,602	1,946,329	268,674	80,041	1,597,614	2,905,254	2,826,787	77,633	834
20	Production only.....	2,654,657	269,651	113,185	23,867	5,706	83,612	61,712	46,499	15,213	.....
21	Production and drilling of new wells.....	30,030,259	5,530,951	1,833,144	244,807	74,335	1,514,002	2,843,542	2,780,288	62,420	834
22	California-San Joaquin Valley <sup>6</sup> .....	113,799,314	19,409,485	6,087,323	683,595	273,485	5,130,243	9,758,582	9,706,133	49,133	3,316
23	Other fields <sup>7</sup> .....	3,103,354	704,103	172,351	28,694	5,886	137,771	332,956	300,840	32,116	.....
STATES.											
24	California <sup>8</sup> .....	146,484,230	25,210,087	8,033,652	952,269	353,526	6,727,857	12,663,836	12,532,920	126,766	4,150
25	Colorado <sup>9</sup> .....	1,444,800	327,355	131,651	13,724	.....	117,927	145,033	116,312	28,721	.....
26	Production only.....	391,800	11,191	4,460	2,324	.....	2,136	1,360	561	799	.....
27	Production and drilling of new wells.....	1,053,000	316,164	127,191	11,400	.....	115,791	143,673	115,751	27,922	.....
28	Illinois.....	34,366,518	13,476,053	3,062,669	337,189	99,109	2,626,371	4,126,948	4,075,483	38,752	12,713
29	Production only.....	2,475,656	433,690	135,823	22,844	6,705	106,274	50,318	40,363	9,955	.....
30	Production and drilling of new wells.....	31,890,862	13,042,363	2,926,846	314,345	92,404	2,520,097	4,076,630	4,035,120	28,797	12,713
31	Indiana.....	16,836,419	2,483,585	1,051,870	173,911	60,206	817,753	494,173	395,697	75,881	22,595
32	Production only.....	4,403,436	657,917	329,362	55,169	14,682	259,511	94,247	68,794	10,963	14,490
33	Production and drilling of new wells.....	12,432,983	1,825,668	722,508	118,742	45,524	558,242	399,926	326,903	64,918	8,105
34	Kansas.....	37,072,298	4,018,459	819,886	180,479	123,325	516,082	1,122,696	845,783	7,368	269,545
35	Production only.....	4,414,793	308,650	133,143	39,473	8,528	85,137	60,255	19,729	4,952	35,574
36	Production and drilling of new wells.....	32,657,505	3,709,809	686,743	141,001	114,797	430,945	1,062,441	826,054	2,416	233,971
37	Kentucky.....	5,146,459	577,908	178,305	35,154	17,819	125,332	178,165	172,095	6,070	.....
38	Production only.....	2,228,731	146,744	46,911	9,838	3,828	33,245	33,581	37,173	1,408	.....
39	Production and drilling of new wells.....	2,917,728	431,164	131,394	25,316	13,991	92,087	139,584	134,922	4,662	.....
40	Louisiana <sup>6</sup> .....	8,049,682	2,134,807	794,157	88,626	132,226	573,305	641,405	613,459	20,746	7,200
41	New York.....	14,903,354	1,558,691	324,984	61,726	26,315	236,943	494,753	420,408	8,689	65,656
42	Production only.....	8,377,859	379,501	91,090	11,080	4,334	75,676	49,513	43,884	2,379	3,250
43	Production and drilling of new wells.....	6,525,495	1,179,190	233,894	50,646	21,981	161,267	445,240	376,524	6,310	62,406
44	Ohio.....	92,923,090	21,233,439	4,138,323	541,476	451,240	3,145,607	9,523,464	4,009,599	137,790	5,376,075
45	Production only.....	30,089,803	6,359,703	967,440	133,951	262,210	571,277	4,456,001	3,977,662	18,985	4,129,354
46	Production and drilling of new wells.....	62,833,287	14,873,736	3,170,883	407,525	189,028	2,574,330	5,067,463	3,701,937	118,805	1,246,721
47	Oklahoma.....	62,739,176	12,950,891	3,203,485	707,663	221,155	2,274,667	4,083,087	3,894,782	57,718	130,587
48	Production only.....	11,111,533	1,494,913	594,761	146,203	37,050	411,508	216,381	201,182	14,056	1,143
49	Production and drilling of new wells.....	51,627,623	11,455,978	2,608,724	561,460	184,105	1,863,159	3,866,706	3,693,600	43,662	129,444
50	Pennsylvania.....	173,321,609	21,998,980	5,348,952	748,538	455,702	4,144,712	8,502,931	5,032,525	399,027	3,071,379
51	Production only.....	25,351,021	2,350,284	747,039	83,347	25,000	638,692	542,930	443,050	65,814	34,066
52	Production and drilling of new wells.....	147,970,588	19,648,696	4,601,913	665,191	430,702	3,506,020	7,960,001	4,589,475	333,213	3,037,313
53	Texas <sup>9</sup> .....	11,344,567	4,067,567	1,595,409	171,236	65,593	1,358,580	1,326,906	1,243,824	83,082	.....
54	Production only.....	2,172,720	189,911	80,210	13,012	300	66,898	42,544	35,589	6,945	.....
55	Production and drilling of new wells.....	9,171,847	3,877,656	1,515,199	158,224	65,293	1,291,682	1,284,362	1,208,225	76,137	.....
56	West Virginia.....	68,811,344	25,005,078	5,188,300	575,599	214,726	4,397,975	7,677,963	6,334,336	449,963	893,664
57	Production only.....	5,527,697	778,080	322,155	59,659	7,227	255,269	117,668	75,432	11,568	30,668
58	Production and drilling of new wells.....	63,283,647	24,226,998	4,866,145	515,940	207,499	4,142,706	7,560,295	6,258,904	438,395	862,996
59	All other states <sup>10</sup> .....	2,135,437	595,744	55,665	18,270	8,556	28,539	299,125	259,790	4,022	35,313
60	Production only.....	544,650	33,083	10,605	5,900	1,311	3,394	12,445	11,315	1,130	.....
61	Production and drilling of new wells.....	1,590,787	562,661	45,060	12,370	7,245	25,145	286,680	248,475	2,892	35,313

<sup>1</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.  
<sup>2</sup> Includes \$7,689,514, which can not be distributed among the several states and fields. The fields affected are: Appalachian, Lima-Indiana, Illinois, Mid-Continent, and Gulf. The states affected are: Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia.  
<sup>3</sup> The amounts included in "Rent of offices and other sundry expenses" for states and fields and properly distributed in the total for the United States are as follows: Salaried officers of corporations, superintendents, and managers, \$242,364; clerks and other subordinate salaried employees, \$163,850; taxes, \$32,352; and contract work, \$107,259. The fields affected are: Appalachian, Lima-Indiana, Illinois, Mid-Continent, Gulf, California-Coastal and southern, and California-San Joaquin Valley. The states affected are: California, Illinois, Indiana, Louisiana, New York, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia. (See Introduction, "Administrative expenses of general offices.")  
<sup>4</sup> The total includes minor products valued at \$114,758, distributed as follows: Appalachian field, \$33,437; Lima-Indiana field, \$3,028; Mid-Continent field, \$90; Gulf field, \$9,803; California-Coastal and southern field, \$6,220; California-San Joaquin Valley field, \$57,880; other fields, \$4,300; California, \$64,100; Colorado, \$4,300; Indiana, \$3,028; Kansas, \$90; Louisiana, \$1,163; Ohio, \$17,745; Pennsylvania, \$15,447; Texas, \$8,640; and West Virginia, \$245.

PETROLEUM AND NATURAL GAS.

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ENTERPRISES, BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909—Continued.

EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.				PRIMARY POWER OWNED.					
Miscellaneous.						Per cent of total.				Petroleum.		Natural gas. <sup>1</sup>		Steam engines.		Gas or gaso- line engines.			
Total (dolls.).	Contract work, including compensation of part-time em- ployees (dolls.).	Royalties and rent of wells (dolls.).	Taxes (dolls.).	Rent of offices and other sundry expenses (dolls.).	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.	Total value <sup>1</sup> (dolls.).	Barrels (42 gals.).	Value at well (dolls.).	M cubic feet.	Value at well (dolls.).	Total horse- power.	Num- ber.	Horse- power.	Num- ber.	Horse- power.
1 50,024,628	16,736,510	21,282,820	32,576,986	39,428,312	25.3	37.8	12.3	15.7	8.9	185,416,684	171,559,394	117,696,529	569,800,490	67,605,397	1,221,809	36,928	746,658	21,762	475,151
2 4,396,294	810,332	2,356,683	504,030	725,249	27.6	41.7	5.6	16.4	8.6	28,463,089	24,327,036	18,293,193	65,280,711	10,138,677	286,782	10,945	171,847	6,559	114,935
3 46,034,557	15,818,919	18,926,137	2,040,604	248,897	24.7	37.3	13.0	15.6	9.3	156,953,595	147,232,358	99,403,336	494,519,779	57,466,720	935,027	25,983	574,811	15,203	360,216
4 27,955,531	10,718,497	10,439,176	31,625,597	35,172,261	21.5	37.7	15.6	15.2	9.9	97,764,641	26,811,032	40,977,227	444,575,503	56,753,977	918,597	30,539	606,825	15,181	311,772
5 2,224,191	502,571	1,033,124	354,791	333,705	21.4	53.9	5.6	11.5	7.6	17,627,317	5,581,649	8,857,063	52,575,651	8,752,326	226,412	10,068	154,257	4,413	72,155
6 25,731,340	10,215,926	9,406,052	1,270,806	4,838,556	21.5	35.3	17.2	15.8	10.3	80,137,324	21,229,383	32,120,164	391,999,852	48,001,651	692,185	20,471	452,568	10,768	239,617
7 1,799,967	630,370	675,594	118,231	366,772	35.3	23.4	14.7	15.5	11.1	6,027,776	4,673,964	4,079,482	8,111,144	1,945,266	57,691	274	8,205	2,413	49,486
8 645,101	149,607	337,280	56,767	101,447	34.8	26.5	9.0	20.2	9.5	3,023,088	2,342,041	2,074,684	4,829,388	945,376	30,320	130	3,018	1,379	27,302
9 1,154,866	489,763	338,314	61,484	265,325	35.6	21.5	18.2	12.6	12.1	3,004,688	2,331,923	2,004,798	3,281,756	999,890	27,371	144	5,187	1,034	22,184
10 6,286,436	2,302,651	2,776,068	72,107	1,135,610	22.7	30.6	17.1	20.6	9.0	18,895,815	29,146,231	18,329,637	5,538,660	566,178	40,615	247	4,720	1,541	35,895
11 247,549	18,602	190,259	5,950	32,738	31.3	11.6	4.3	43.9	8.9	1,189,592	1,884,056	1,186,013	17,027	3,579	3,515	24	436	149	3,079
12 6,038,887	2,284,049	2,585,809	66,157	1,102,872	22.4	31.3	17.5	19.8	9.0	17,706,223	27,262,175	17,143,624	5,521,633	562,599	37,100	223	4,284	1,392	32,816
13 8,308,252	2,496,709	3,953,542	391,667	1,466,334	24.1	30.6	13.6	21.5	10.1	26,058,280	49,128,533	18,250,632	98,527,563	7,807,558	101,352	2,017	44,803	1,609	58,549
14 829,374	103,694	189,343	60,759	175,573	40.1	15.7	5.0	28.0	12.6	4,150,984	10,386,214	3,795,731	7,113,893	355,253	17,361	359	6,843	531	10,518
15 7,478,875	2,393,015	3,464,199	330,908	1,290,756	22.3	32.3	14.5	21.0	9.8	21,907,296	38,742,319	14,454,901	91,413,664	7,452,305	83,991	1,658	37,960	1,078	46,031
16 1,369,270	82,928	954,092	50,064	282,186	39.8	33.0	1.6	18.9	6.6	6,877,891	9,377,844	6,667,902	703,666	200,996	23,992	1,014	22,612	75	1,380
17 51,847	5,213	33,805	3,822	9,207	57.5	18.3	2.4	15.8	6.0	451,728	641,605	448,335	23,795	2,230	3,984	58	1,359	1	25
18 1,317,423	7,715	920,287	46,442	272,979	39.1	33.6	1.6	19.1	6.6	6,426,163	8,736,239	6,218,757	679,871	198,766	22,608	956	21,253	74	1,355
19 949,019	68,527	522,193	114,265	244,034	33.6	50.1	1.2	9.0	6.2	7,009,700	11,277,375	6,989,033	134,020	14,447	18,410	643	13,667	228	4,743
20 94,754	24,336	41,682	11,871	16,865	42.0	22.9	9.0	15.5	10.7	479,818	664,884	472,592	5,490	2,426	2,161	40	757	60	1,404
21 854,265	44,191	480,511	102,394	227,169	33.1	51.4	0.8	8.7	6.0	6,529,882	10,612,491	6,516,441	128,530	12,021	16,249	603	12,910	168	3,339
22 3,563,580	204,106	1,938,790	162,404	1,258,280	31.4	50.3	1.1	10.0	7.3	22,300,635	40,826,778	22,077,756	188,876	164,999	58,149	2,069	42,971	702	15,178
23 198,796	116,463	23,365	10,299	48,669	24.5	47.3	16.5	3.3	8.4	481,946	317,637	325,670	2,021,058	151,976	3,003	125	2,855	13	148
24 4,512,599	272,633	2,460,983	276,669	1,502,314	31.9	50.2	1.1	9.8	7.1	29,310,335	52,104,153	29,066,789	322,896	179,446	76,559	2,712	56,638	930	19,921
25 50,671	2,951	7,695	8,140	31,885	40.2	44.3	0.9	2.4	12.2	813,168	305,090	308,611	28	257	2,472	112	2,397	4	75
26 5,371	2,501	1,132	590	1,148	39.9	12.2	22.3	10.1	15.5	21,762	16,087	17,455	28	7	432	18	432	-----	-----
27 45,300	450	6,563	7,550	30,737	40.2	45.4	0.1	2.1	12.1	291,406	288,943	291,156	-----	250	2,040	94	1,965	4	75
28 6,286,436	2,302,651	2,776,068	72,107	1,135,610	22.7	30.6	17.1	20.6	9.0	18,895,815	29,146,231	18,329,637	5,538,660	566,178	40,615	247	4,720	1,541	35,895
29 247,549	18,602	190,259	5,950	32,738	31.3	11.6	4.3	43.9	8.9	1,189,592	1,884,056	1,186,013	17,027	3,579	3,515	24	436	149	3,079
30 6,038,887	2,284,049	2,585,809	66,157	1,102,872	22.4	31.3	17.5	19.8	9.0	17,706,223	27,262,175	17,143,624	5,521,633	562,599	37,100	223	4,284	1,392	32,816
31 937,542	276,022	319,833	73,362	268,325	42.4	19.9	11.1	12.9	13.8	3,706,619	2,079,977	1,741,475	5,992,652	1,480,116	28,159	147	5,945	916	22,214
32 234,308	127,038	127,060	26,440	53,470	50.1	14.3	4.2	19.3	12.1	1,211,560	809,643	693,584	2,808,057	514,948	10,727	62	1,800	379	8,927
33 703,234	248,684	192,773	46,922	214,855	39.6	21.9	13.6	10.6	14.3	2,013,059	1,270,514	1,047,891	3,184,695	965,168	17,432	85	4,145	537	13,287
34 2,075,877	293,060	1,215,270	122,230	445,317	20.4	27.9	7.3	30.0	21.4	6,681,780	1,182,293	462,512	69,619,109	6,219,178	36,441	41	6,344	264	30,097
35 115,252	18,329	65,201	9,717	22,005	43.1	19.5	5.9	21.1	10.3	888,561	349,326	5,707,179	263,801	3,722	27	591	156	3	131
36 1,960,625	274,731	1,150,069	112,613	423,312	18.5	28.6	7.4	31.0	14.4	6,068,653	293,732	113,186	63,911,930	5,956,377	32,719	14	5,753	108	26,966
37 221,438	96,514	68,917	22,488	33,519	39.9	30.8	16.7	11.9	9.7	892,281	535,486	410,282	2,126,260	481,999	4,351	59	1,049	153	3,302
38 61,252	13,641	28,614	10,685	8,412	32.0	26.8	9.0	15.9	12.9	370,356	179,068	136,638	1,180,211	233,718	1,512	20	400	76	1,112
39 160,186	82,873	40,303	11,903	25,107	30.5	32.4	19.2	9.3	8.6	521,925	356,018	273,644	946,049	248,281	2,839	39	6,449	77	2,190
40 699,245	62,440	496,198	13,912	126,695	37.2	30.0	2.9	23.2	6.6	2,177,986	2,889,919	1,976,007	699,166	200,816	5,345	218	5,150	10	195
41 738,954	405,184	195,802	64,657	73,311	20.8	31.7	26.0	12.6	8.9	2,668,996	1,159,185	1,887,630	3,138,130	781,366	41,797	1,761	25,378	1,173	16,419
42 238,898	97,994	92,616	27,128	21,160	24.0	13.0	25.8	24.4	12.7	1,181,777	674,407	1,093,687	405,262	88,090	24,257	893	12,885	816	11,372
43 500,056	307,190	103,186	37,529	52,151	19.8	37.8	26.0	8.8	7.6	1,487,219	434,778	793,943	2,732,868	693,276	17,540	808	12,493	357	5,047
44 7,571,652	2,879,315	2,674,350	585,542	3,432,445	19.5	44.9	13.6	12.6	9.5	29,620,959	9,263,942	11,302,653	98,088,778	18,300,561	167,027	3,307	70,090	3,962	96,937
45 936,262	182,712	361,669	254,632	137,249	15.2	27.0	1.9	5.7	6.2	9,818,113	2,198,826	2,437,668	31,355,081	7,362,700	41,712	655	12,953	1,431	28,759
46 6,635,390	2,696,603	2,312,681	330,910	1,295,196	21.3	34.1	2.8	15.5	10.9	18,028,846	7,065,122	8,864,985	66,733,697	10,937,861	125,315	2,652	57,137	2,531	68,178
47 5,664,319	2,103,273	2,331,198	261,631	968,217	24.7	31.5	16.2	18.0	9.5	17,685,092	45,671,724	16,233,865	23,063,558	1,451,227	60,496	1,818	35,022	1,2	

PETROLEUM—DETAILED STATISTICS OF ENTERPRISES BY CHARACTER OF OPERATIONS, BY FIELDS AND STATES: 1909.

Table 50	FIELD, STATE, AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				Aggregate.	PERSONS ENGAGED IN INDUSTRY.								
			Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.		Proprietors and officials.				Clerks and other subordinate salaried employees.	Wage earners, Dec. 15 or nearest representative day.			
				Total.	Dry.			Proprietors and firm members.		Salaried officers of corporations.	Superintendents and managers.		Total.	Men 16 years of age and over.		
								Total.	Number performing manual labor.					Total.	Engineers, firemen, mechanics, etc.	All other employees.
1	United States.....	6,683	129,422	11,451	1,590	4,147	40,245	14,990	13,064	2,068	641	1,285	1,222	24,033	19,153	4,880
2	Production only.....	4,393	52,687	1	1	1,164	13,126	9,384	8,846	1,507	186	352	275	3,467	3,098	369
3	Production and drilling of new wells.....	2,290	76,735	11,450	1,589	2,983	27,119	5,606	4,218	561	455	933	947	20,566	16,055	4,511
	<b>FIELDS.</b>															
4	Appalachian.....	4,257	77,839	4,756	683	1,426	16,612	10,212	9,764	1,752	137	311	214	6,186	5,486	700
5	Production only.....	2,998	33,973			288	8,477	6,818	6,669	1,274	40	109	82	1,577	1,421	156
6	Production and drilling of new wells.....	1,259	43,866	4,756	683	1,138	8,135	3,394	3,095	474	97	202	132	4,609	4,065	544
7	Lima-Indians.....	781	20,728	521	80	1,972	3,371	1,599	1,463	199	52	84	62	1,710	1,508	202
8	Production only.....	644	11,698			727	1,947	1,298	1,220	165	32	46	36	613	599	44
9	Production and drilling of new wells.....	137	9,030	521	80	1,245	1,424	301	243	34	20	38	26	1,097	939	158
10	Illinois.....	311	10,815	2,495	374	183	5,115	989	809	22	49	131	111	4,015	3,256	759
11	Production only.....	126	1,207			5	536	357	328	10	15	14	20	159	150	9
12	Production and drilling of new wells.....	185	9,608	2,495	374	178	4,579	632	481	12	34	117	91	3,856	3,106	750
13	Mid-Continent.....	851	14,330	2,392	224	315	5,009	1,221	706	39	173	342	339	3,449	2,679	770
14	Production only.....	456	4,733	1	1	124	1,354	618	437	23	61	120	99	637	544	93
15	Production and drilling of new wells.....	395	9,597	2,391	223	191	3,655	603	269	16	112	222	240	2,812	2,135	677
16	Gulf.....	122	1,306	531	167	173	1,940	309	197	39	39	73	86	1,545	1,084	461
17	Production only.....	32	90			2	258	120	101	16	8	11	10	128	95	33
18	Production and drilling of new wells.....	90	1,216	531	167	171	1,682	189	96	23	31	62	76	1,417	989	428
19	California-Coastal and southern.....	139	1,558	111	8	39	2,080	228	77	13	56	95	114	1,738	1,271	467
20	Production only.....	80	644			14	211	98	73	12	7	18	14	99	89	10
21	Production and drilling of new wells.....	59	914	111	8	25	1,869	130	4	1	49	77	100	1,639	1,182	457
22	California-San Joaquin Valley.....	192	2,728	596	25	30	5,950	406	29		133	244	296	5,248	3,771	1,477
23	Production only.....	38	295			3	314	59	5		22	32	14	241	220	21
24	Production and drilling of new wells.....	154	2,433	596	25	27	5,636	347	24		111	212	282	5,007	3,551	1,456
25	Other fields.....	30	118	49	29	9	168	26	19	4	2	5		142	98	44
26	Production only.....	19	47			1	29	16	13	3	1	2		13	10	3
27	Production and drilling of new wells.....	11	71	49	29	8	139	10	6	1	1	3		129	88	41
	<b>STATES.</b>															
28	California.....	331	4,286	707	33	60	8,030	634	106	13	189	339	410	6,986	5,042	1,944
29	Production only.....	118	989			17	525	157	78	12	29	50	28	340	309	31
30	Production and drilling of new wells.....	213	3,347	707	33	52	7,505	477	28	1	160	289	382	6,646	4,733	1,913
31	Colorado.....	22	75	39	28	9	149	23	16	3	2	5		126	85	41
32	Production only.....	16	17			1	21	15	12	3	1	2		6	4	2
33	Production and drilling of new wells.....	6	58	39	28	8	128	8	4		1	3		120	81	39
34	Illinois.....	311	10,815	2,495	374	183	5,115	989	809	22	49	131	111	4,015	3,256	759
35	Production only.....	126	1,207			5	536	357	328	10	15	14	20	159	150	9
36	Production and drilling of new wells.....	185	9,608	2,495	374	178	4,579	632	481	12	34	117	91	3,856	3,106	750
37	Indiana.....	187	8,121	169	29	1,498	1,399	286	238	20	20	28	25	1,088	926	162
38	Production only.....	161	3,016			442	539	234	208	19	11	15	7	298	272	26
39	Production and drilling of new wells.....	26	5,105	169	29	1,056	860	52	30	1	9	13	18	790	654	136
40	Kansas.....	118	1,374	34	9	98	290	158	127	7	7	24	9	123	99	24
41	Production only.....	102	1,105			72	231	123	97	6	7	19	9	99	83	16
42	Production and drilling of new wells.....	16	269	34	9	26	59	35	30	1	1	5		24	16	8
43	Kentucky.....	70	952	119	51	32	304	133	109	9	11	13	12	159	126	33
44	Production only.....	44	425			16	131	79	68	4	5	6	8	44	38	6
45	Production and drilling of new wells.....	26	527	119	51	16	173	54	41	5	6	7	4	115	88	27
46	Louisiana.....	25	201	99	27	38	641	112	71	1	21	20	27	502	348	154
47	Production only.....	8	19				148	77	66	1	7	4	9	62	39	23
48	Production and drilling of new wells.....	17	182	99	27	38	493	35	5		14	16	18	440	309	131
49	New York.....	633	10,698	379	6	64	1,822	1,528	1,514	176	3	11	14	280	260	20
50	Production only.....	512	6,829			21	1,367	1,235	1,228	125	2	5	10	122	111	11
51	Production and drilling of new wells.....	121	3,869	379	6	43	455	293	286	51	1	6	4	158	149	9
52	Ohio.....	1,071	31,667	1,810	413	1,285	5,721	2,530	2,273	262	101	156	99	3,092	2,776	316
53	Production only.....	717	11,176			334	2,179	1,633	1,542	183	33	58	42	504	464	40
54	Production and drilling of new wells.....	354	20,511	1,810	413	951	3,542	897	731	79	68	98	57	2,588	2,312	276
55	Oklahoma.....	671	11,945	2,150	166	144	4,273	958	487	23	163	308	329	2,986	2,290	696
56	Production only.....	309	3,123			39	998	409	263	11	51	95	90	499	426	73
57	Production and drilling of new wells.....	362	8,822	2,150	166	105	3,275	549	224	12	112	213	239	2,487	1,864	623
58	Pennsylvania.....	2,748	41,829	2,258	179	418	8,879	6,568	6,438	1,432	23	107	73	2,238	2,051	187
59	Production only.....	1,994	21,883			158	5,472	4,441	4,380	1,071	12	49	37	994	888	106
60	Production and drilling of new wells.....	754	19,946	2,258	179	260	3,407	2,127	2,058	361	11	58	36	1,244	1,163	81
61	Texas.....	159	2,116	640	189	208	1,745	302	218	47	21	63	60	1,383	1,026	357
62	Production only.....	69	576	1	1	15	235	129	112	21	4	13	1	105	91	14
63	Production and drilling of new wells.....	90	1,540	639	188	193	1,510	173	106	26	17	50	59	1,278	935	343
64	West Virginia.....	329	5,280	542	85	101	1,858	766	655	52	31	80	53	1,039	855	184
65	Production only.....	214	2,342			44	736	494	463	41	9	22	14	228	217	11
66	Production and drilling of new wells.....	115	2,938	542	85	57	1,122	272	192	11	22	58	39	811	638	173
67	All other states.....	8	43	10	1		19	3	3	1				18	13	3
68	Production only.....	3	30				8	1	1					7	6	1
69	Production and drilling of new wells.....	5	13	10	1		11	2	2					9	7	2

<sup>1</sup> Includes 8 boys under 16 years of age distributed as follows: Gulf field, 7; California-San Joaquin Valley field, 1; California, 1; Louisiana, 1; Texas, 6.  
<sup>2</sup> Includes operators distributed as follows: Michigan, 1; Missouri, 2; Wyoming, 5.

MINES AND QUARRIES.

PETROLEUM—DETAILED STATISTICS OF ENTERPRISES BY CHARACTER

Table 50—Continued.		EXPENSES OF OPERATION AND DEVELOPMENT.								
		Capital.	Services.					Supplies, fuel, and rent of power.		
			Aggregate.	Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Total.	Supplies and materials.	Fuel and rent of power.
1	United States.....	\$360,422,056	\$79,748,844	\$22,597,940	\$2,775,808	\$984,392	\$18,837,740	\$29,114,627	\$28,456,179	\$658,448
2	Production only.....	75,204,115	8,160,573	3,026,620	477,514	106,713	2,442,393	1,477,000	1,318,643	158,387
3	Production and drilling of new wells.....	285,217,941	71,588,271	19,571,320	2,298,294	877,679	16,395,347	27,637,597	27,137,536	500,061
FIELDS.										
4	Appalachian.....	90,359,744	19,372,456	4,723,086	466,203	126,170	4,130,713	6,005,374	5,740,193	265,181
5	Production only.....	39,282,714	3,528,439	1,160,774	121,640	33,942	1,005,192	705,231	617,664	87,567
6	Production and drilling of new wells.....	51,077,030	15,844,017	3,562,312	344,563	92,228	3,125,521	5,300,143	5,122,529	177,614
7	Lima-Indiana.....	15,318,992	3,273,723	1,231,245	120,719	32,403	1,078,123	612,881	578,060	34,821
8	Production only.....	9,481,253	1,179,889	482,442	47,830	11,608	423,004	147,308	135,948	11,360
9	Production and drilling of new wells.....	5,837,739	2,093,834	748,803	72,889	20,795	655,119	465,573	442,112	23,461
10	Illinois.....	33,682,452	13,322,678	3,013,166	325,049	86,986	2,601,131	4,088,614	4,050,296	38,318
11	Production only.....	2,464,590	432,716	135,058	22,844	6,705	105,509	50,284	40,363	9,921
12	Production and drilling of new wells.....	31,217,862	12,889,962	2,878,108	302,205	80,281	2,495,622	4,038,330	4,009,933	28,397
13	Mid-Continent.....	64,388,049	13,405,455	3,541,326	702,588	204,133	2,634,605	4,000,420	3,930,720	69,700
14	Production only.....	15,872,858	1,698,583	691,375	160,482	36,732	494,161	246,291	224,849	21,442
15	Production and drilling of new wells.....	48,515,191	11,706,902	2,849,951	542,106	167,401	2,140,444	3,754,129	3,705,871	48,258
16	Gulf.....	11,489,778	4,890,777	1,954,250	208,296	157,534	1,558,420	1,603,887	1,508,031	95,856
17	Production only.....	1,495,090	213,645	123,113	6,140	95,161	6,140	39,115	33,819	5,296
18	Production and drilling of new wells.....	9,994,688	4,677,132	1,831,137	186,484	181,394	1,463,259	1,564,772	1,474,212	90,560
19	California-Coastal and southern.....	32,682,101	5,800,331	1,946,329	268,674	80,041	1,597,614	2,905,249	2,827,618	77,633
20	Production only.....	2,651,842	269,380	113,185	23,867	5,706	83,612	61,707	46,494	15,213
21	Production and drilling of new wells.....	30,030,259	5,530,951	1,833,144	244,807	74,335	1,514,002	2,843,542	2,781,122	62,420
22	California-San Joaquin Valley.....	110,607,640	19,299,688	6,048,592	670,555	267,125	5,110,912	9,721,606	9,675,048	46,558
23	Production only.....	3,394,468	822,599	313,893	76,715	5,890	231,298	224,564	218,895	5,669
24	Production and drilling of new wells.....	107,213,172	18,477,089	5,734,699	593,840	261,245	4,879,614	9,497,042	9,456,153	40,889
25	Other fields.....	1,893,300	383,706	139,946	13,724	-----	126,222	176,596	146,215	30,381
26	Production only.....	561,900	15,322	6,780	4,456	-----	4,456	2,530	611	1,919
27	Production and drilling of new wells.....	1,332,000	368,384	133,166	11,400	-----	121,766	174,066	145,604	28,462
STATES.										
28	California.....	143,289,741	25,100,019	7,994,921	939,229	347,166	6,708,526	12,626,855	12,502,664	124,191
29	Production only.....	6,046,310	1,091,978	427,078	100,582	11,586	814,910	286,271	265,389	20,882
30	Production and drilling of new wells.....	137,243,431	24,008,040	7,567,843	838,647	335,580	6,893,616	12,340,584	12,237,275	103,309
31	Colorado.....	1,444,800	327,355	131,651	13,724	-----	117,927	145,033	116,312	28,721
32	Production only.....	391,800	11,191	4,460	2,324	-----	2,136	1,860	1,561	799
33	Production and drilling of new wells.....	1,053,000	316,164	127,191	11,400	-----	115,791	143,673	115,751	27,922
34	Illinois.....	33,682,452	13,322,678	3,013,166	325,049	86,986	2,601,131	4,088,614	4,050,296	38,318
35	Production only.....	2,464,590	432,716	135,058	22,844	6,705	105,509	50,284	40,363	9,921
36	Production and drilling of new wells.....	31,217,862	12,889,962	2,878,108	302,205	80,281	2,495,622	4,038,330	4,009,933	28,397
37	Indiana.....	4,505,812	1,699,816	756,418	62,498	21,704	672,212	331,740	329,834	22,406
38	Production only.....	2,338,445	449,884	233,517	20,518	4,133	213,864	60,233	52,574	7,659
39	Production and drilling of new wells.....	2,167,067	1,249,932	517,897	41,980	17,569	458,348	291,507	276,760	14,747
40	Kansas.....	4,169,186	219,742	106,479	19,499	2,062	84,918	23,091	18,419	4,672
41	Production only.....	3,524,108	160,221	82,301	16,034	2,062	64,205	15,433	11,296	4,137
42	Production and drilling of new wells.....	645,080	59,521	24,178	3,465	-----	20,713	7,658	7,123	535
43	Kentucky.....	1,518,080	396,500	129,391	21,805	8,778	98,508	117,937	112,113	5,824
44	Production only.....	697,986	88,575	41,643	7,955	3,328	30,365	18,222	16,539	1,383
45	Production and drilling of new wells.....	820,094	307,925	87,748	13,850	5,450	68,143	99,715	95,274	4,441
46	Louisiana.....	2,847,144	1,985,696	740,509	66,670	124,101	549,729	582,581	562,276	20,305
47	Production only.....	852,000	99,823	69,310	13,570	5,840	49,900	15,912	14,312	1,600
48	Production and drilling of new wells.....	1,995,144	1,885,873	671,199	53,100	118,261	499,829	566,669	547,964	18,705
49	New York.....	11,736,894	1,068,331	215,227	15,622	5,724	193,881	304,034	297,636	6,400
50	Production only.....	7,809,754	387,797	76,016	3,845	1,552	70,619	42,119	39,740	2,379
51	Production and drilling of new wells.....	3,927,140	780,534	139,211	11,777	4,172	123,262	261,917	257,896	4,021
52	Ohio.....	31,510,313	8,869,931	2,369,487	236,565	62,475	2,079,147	2,381,895	2,269,208	112,687
53	Production only.....	11,488,291	1,198,471	407,405	57,333	14,424	335,648	172,910	161,828	11,082
54	Production and drilling of new wells.....	20,022,022	7,670,460	1,962,082	179,232	48,051	1,743,499	2,208,985	2,107,380	101,605
55	Oklahoma.....	57,516,920	12,023,257	3,063,188	653,479	199,911	2,199,798	3,671,729	3,614,232	57,497
56	Production only.....	10,819,122	1,462,273	582,667	139,678	34,670	408,319	211,517	197,461	14,056
57	Production and drilling of new wells.....	46,697,808	10,560,984	2,470,521	513,801	165,241	1,791,479	3,460,212	3,416,771	43,441
58	Pennsylvania.....	43,255,459	6,841,504	1,617,630	135,814	37,351	1,444,465	2,044,495	1,921,394	123,101
59	Production only.....	22,436,432	2,160,819	694,251	62,154	18,709	613,388	489,063	423,727	65,336
60	Production and drilling of new wells.....	20,819,027	4,680,685	923,379	73,660	18,642	831,077	1,555,432	1,497,667	57,765
61	Texas.....	11,344,567	4,067,567	1,595,409	171,236	65,893	1,358,580	1,326,906	1,243,824	83,082
62	Production only.....	2,172,720	189,911	80,210	13,012	66,896	42,544	35,599	35,599	6,945
63	Production and drilling of new wells.....	9,171,847	3,877,656	1,515,199	158,224	65,283	1,291,682	1,284,362	1,208,225	76,137
64	West Virginia.....	13,152,478	3,769,797	866,182	114,618	22,241	729,323	1,418,152	1,388,568	29,584
65	Production only.....	3,993,059	477,452	185,379	17,665	3,402	164,312	69,992	58,904	11,083
66	Production and drilling of new wells.....	9,159,419	3,292,315	680,803	96,953	18,839	565,011	1,348,160	1,329,664	18,496
67	All other states*.....	448,500	56,351	8,295	-----	-----	8,295	31,563	29,903	1,660
68	Production only.....	169,500	4,131	2,320	-----	-----	2,320	1,170	50	1,120
69	Production and drilling of new wells.....	279,000	52,220	5,975	-----	-----	5,975	30,393	29,853	540

\* The cost of purchased gas, amounting to \$3,946, which is included in supplies, is distributed as follows: California, \$334; Ohio, \$288; Oklahoma, \$2,740; Pennsylvania, \$84.

# PETROLEUM AND NATURAL GAS.

OF OPERATIONS, BY FIELDS AND STATES: 1909—Continued.

	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.			PRIMARY POWER OWNED.				
	Miscellaneous.					Per cent of total.					Petroleum.			Steam engines.		Gas or gas-line engines.		
	Total.	Contract work, including compensation of part-time employees.	Royalties and rent of wells.	Taxes.	Rent of offices and other sundry expenses.	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.	Total value.	Barrels (42 gals.).	Value at well.	Total horsepower.	Number.	Horsepower.	Number.	Horsepower.
1	\$28,036,277	\$3,380,820	\$12,509,181	\$1,004,164	\$5,142,112	28.3	36.5	11.8	15.7	7.5	\$104,550,845	162,581,408	\$103,600,756	730,634	25,554	435,120	16,106	295,514
2	3,656,923	757,525	2,127,456	239,548	532,394	37.1	18.1	9.3	28.1	9.5	18,212,838	24,095,412	18,091,011	274,546	10,782	166,660	6,394	107,886
3	24,379,354	8,623,295	10,381,725	764,616	4,609,718	27.3	38.6	12.0	14.5	7.5	86,338,007	138,482,996	85,509,745	456,088	14,772	268,460	9,712	187,628
4	8,643,996	4,248,637	3,065,991	305,606	1,033,762	24.4	31.0	21.9	15.8	6.9	27,306,784	18,177,293	27,052,296	467,823	19,272	306,166	9,707	161,657
5	1,662,434	499,309	872,575	114,719	205,768	32.9	20.0	13.3	24.7	9.1	8,772,295	5,485,149	8,709,581	216,883	9,929	150,162	4,289	66,721
6	6,981,562	3,779,268	2,183,413	190,887	827,994	22.5	33.5	23.9	13.8	6.4	18,534,489	12,692,144	18,342,715	250,940	9,343	156,004	5,418	94,936
7	1,429,597	494,904	583,995	76,546	274,962	37.6	18.7	15.1	17.8	10.7	4,070,080	4,642,133	4,051,394	51,139	216	4,020	2,347	47,119
8	550,139	137,903	305,149	40,350	66,737	40.9	12.5	11.7	25.9	9.1	1,186,859	2,079,888	2,339,801	28,308	120	2,288	1,353	26,020
9	879,458	356,191	278,466	36,196	208,225	35.8	22.2	17.0	13.3	11.7	1,990,192	2,302,332	1,978,748	22,831	96	1,732	994	21,099
10	6,220,898	2,275,229	2,753,561	70,145	1,121,963	22.6	30.7	17.1	20.7	8.9	18,565,060	29,138,127	18,324,502	40,432	245	4,692	1,535	35,740
11	247,374	18,602	190,109	5,950	32,713	31.2	11.6	4.3	43.9	8.9	1,186,859	1,883,936	1,185,912	3,487	22	408	149	3,079
12	5,973,524	2,256,627	2,563,452	64,195	1,089,250	22.3	31.3	17.5	19.9	8.9	17,378,201	27,254,191	17,138,590	36,945	223	4,284	1,386	32,661
13	5,863,739	2,007,795	2,696,502	229,488	929,950	26.4	29.8	15.0	20.1	8.6	18,449,211	48,825,021	18,114,213	68,408	1,937	38,798	1,505	29,610
14	760,917	69,331	455,876	54,042	151,648	40.7	14.5	5.8	28.8	12.1	3,783,606	10,257,250	10,257,250	120	2	6,669	519	10,213
15	5,102,822	1,908,444	2,240,630	175,446	778,302	24.3	32.1	16.3	19.1	8.1	14,665,605	38,567,771	14,369,843	51,526	1,638	32,129	986	19,397
16	1,332,640	67,778	950,315	45,734	268,813	40.0	32.8	1.4	19.4	6.4	6,678,844	9,377,844	6,667,092	23,632	1,002	22,252	75	1,380
17	51,417	5,063	33,525	3,622	9,207	57.6	18.3	2.4	15.7	6.0	449,678	641,605	449,678	1,394	58	1,359	1	25
18	1,281,223	62,715	916,790	42,112	259,606	39.2	33.5	1.3	19.6	6.5	6,229,166	8,736,239	6,218,757	22,248	944	20,893	74	1,855
19	948,753	68,327	522,193	114,239	243,994	33.6	50.1	1.2	9.0	6.2	7,008,512	11,277,375	6,989,033	18,410	643	13,667	228	4,743
20	494,458	24,136	41,682	11,845	16,825	42.0	22.9	9.0	15.5	10.6	478,630	664,884	472,592	2,161	40	757	60	1,404
21	854,265	44,191	480,511	102,394	227,169	33.1	51.4	0.8	8.7	6.0	6,529,882	10,612,491	6,516,441	16,249	603	12,910	168	3,339
22	3,529,490	201,858	1,938,583	154,085	1,234,964	31.3	50.4	1.0	10.0	7.2	22,143,227	40,826,778	22,077,756	58,013	2,067	42,855	701	15,158
23	284,142	240	227,394	8,285	48,223	38.2	27.3	(*)	27.6	6.9	1,432,890	2,804,750	1,432,890	2,042	262	4,475	22	404
24	3,245,348	201,618	1,711,189	145,800	1,186,741	31.0	51.4	1.1	9.3	7.2	20,710,337	38,022,028	20,644,866	53,134	1,825	38,380	679	14,754
25	67,164	17,102	8,037	8,321	33,704	36.5	46.0	4.5	2.1	11.0	329,127	316,837	324,470	2,777	122	2,670	8	107
26	6,012	2,861	1,143	735	1,273	44.2	16.5	7.5	13.1	13.1	28,992	21,037	24,685	562	22	542	1	20
27	61,152	14,241	6,894	7,586	32,431	36.1	47.3	3.9	1.9	10.9	300,135	295,800	299,785	2,215	100	2,128	7	87
28	4,478,243	270,185	2,460,776	268,324	1,478,958	31.9	50.3	1.1	9.8	7.0	29,151,739	52,104,153	29,066,789	76,423	2,710	56,522	929	19,901
29	378,630	24,376	269,076	20,130	65,048	39.1	26.2	2.2	24.6	7.8	1,911,520	3,469,634	1,905,482	7,040	282	5,232	82	1,808
30	4,099,613	245,809	2,191,700	248,194	1,413,910	31.5	51.4	1.0	9.1	6.9	27,240,219	48,634,519	27,161,307	69,363	2,428	51,290	847	18,093
31	50,671	2,951	7,695	8,140	31,885	40.2	44.3	0.9	2.4	12.2	313,168	305,030	308,611	2,472	112	2,397	4	75
32	5,371	2,501	1,132	590	1,148	39.9	12.2	22.3	10.1	15.5	21,782	16,087	17,455	432	18	432	1	75
33	45,300	450	6,563	7,550	30,737	40.2	45.4	0.1	2.1	12.1	291,406	288,943	291,156	2,040	94	1,965	4	75
34	6,220,898	2,275,229	2,753,561	70,145	1,121,963	22.6	30.7	17.1	20.7	8.9	18,565,060	29,138,127	18,324,502	40,432	245	4,692	1,535	35,740
35	247,374	18,602	190,109	5,950	32,713	31.2	11.6	4.3	43.9	8.9	1,186,859	1,883,936	1,185,912	3,487	22	408	149	3,079
36	5,973,524	2,256,627	2,563,452	64,195	1,089,250	22.3	31.3	17.5	19.9	8.9	17,378,201	27,254,191	17,138,590	36,945	223	4,284	1,386	32,661
37	591,662	138,694	232,382	34,182	186,404	44.5	20.7	8.2	13.7	13.0	1,723,231	2,050,515	1,715,272	21,818	93	1,874	857	19,944
38	151,134	16,085	97,690	11,869	25,491	53.0	13.4	3.6	21.7	8.3	695,980	808,627	682,840	8,785	53	1,070	358	7,695
39	440,528	122,609	134,692	22,314	160,913	41.4	23.3	9.8	10.8	14.7	1,027,251	1,241,888	1,022,732	13,033	40	784	501	12,249
40	90,172	27,830	46,319	7,761	8,262	48.5	10.5	12.7	21.1	7.3	376,370	958,354	374,482	3,897	19	491	172	3,406
41	62,487	14,952	35,916	6,325	5,294	51.4	9.6	9.3	22.4	7.3	299,763	750,597	297,965	3,263	18	437	144	2,826
42	27,685	12,578	10,403	1,436	2,968	40.6	12.9	21.6	17.5	7.4	76,607	198,757	76,517	634	1	54	28	580
43	149,172	75,231	48,299	5,174	20,468	32.6	29.7	19.0	12.2	6.5	412,444	533,886	409,130	3,007	56	994	131	2,013
44	29,005	7,831	15,687	2,731	2,756	46.9	20.5	8.8	17.7	6.2	137,046	177,868	135,486	1,421	19	375	69	1,046
45	120,107	67,400	32,612	2,443	17,712	32.5	32.4	21.9	10.6	6.6	275,398	356,018	273,644	1,586	37	619	62	967
46	662,615	47,290	492,421	9,582	113,322	37.3	29.3	2.4	24.8	6.2	1,978,939	2,889,919	1,976,007	4,985	206	4,790	10	195
47	14,601	1,163	5,926	2,546	4,966	69.4	15.9	1.2	5.9	7.5	214,017	316,501	212,854	475	18	450	1	25
48	648,014	46,127	480,495	7,036	108,356	35.6	30.0	2.4	25.8	6.1	1,764,922	2,573,418	1,763,153	4,510	188	4,340	9	170
49	549,065	318,163	149,073	37,585	44,247	20.1	28.5	29.8	14.0	7.7	1,896,515	1,155,648	1,881,796	40,932	1,750	25,071	1,120	15,912
50	219,682	94,467	89,725	23,348	18,122	22.5	12.5	28.0	24.8	12.3	1,101,839	674,407	1,093,687	24,054	893	12,873	810	11,169
51	329,406	223,696	65,348	14,237	26,125	19.1	35.9	30.6	8.9	5.5	794,678	481,241	788,109	16,929	857	12,186	310	4,743
52	4,118,549	1,792,558	1,555,369	122,339	648,284	26.7	26.9	20.2	17.5	8.7	11,211,318	9,144,943	11,127,508	135,505	3,234	61,941	3,835	73,564
53	613,156	176,039	333,791	39,329	58,997	34.1	14.5	14.8										

MINES AND QUARRIES.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909.

Table 51

STATE AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.				PERSONS ENGAGED IN INDUSTRY.									
		Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.				Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.			
			Total.	Dry.			Total.	Proprietors and firm members.		Salaried officers of corporations.		Superintendents and managers.	Total.	Men 16 years of age and over.	
								Total.	Number performing manual labor.					Engi-neers, firemen, mechanics, etc.	All other em-ployees.
United States.....	1,207	18,271	2,654	613	981	13,690	4,022	3,061	82	418	543	1,277	8,391	2,202	16,189
Production only.....	797	3,258			235	3,310	2,115	1,862	52	131	122	313	882	120	762
Production and drilling of new wells.....	410	15,013	2,654	613	746	10,380	1,907	1,199	30	287	421	964	7,509	2,082	5,427
California.....	11	30	1	1	2	51	17	7		4	6	13	21	7	14
Illinois.....	12	108	42	10	22	73	15	8		2	5	14	44	25	19
Production only.....	4	12			6	7	3	3					4	3	1
Production and drilling of new wells.....	8	91	42	10	16	66	12	5		2	5	14	40	22	18
Indiana.....	457	2,252	213	61	264	2,551	2,232	2,039	4	121	72	62	257	108	149
Production only.....	408	1,298			107	1,414	1,310	1,210	3	60	40	27	77	25	52
Production and drilling of new wells.....	49	954	213	61	157	1,137	922	829	1	61	32	35	180	83	97
Kansas.....	99	2,028	563	181	251	1,453	142	51	5	30	61	132	1,179	298	881
Production only.....	41	511			59	87	45	22	2	11	12	11	31	25	6
Production and drilling of new wells.....	58	1,517	563	181	192	1,366	97	29	3	19	49	121	1,148	273	875
Kentucky.....	15	157	24	5		82	24	14	1	4	6	11	47	10	37
Production only.....	11	76				22	15	13			2	3	4		4
Production and drilling of new wells.....	4	81	24	5		60	9	1	1	4	4	8	43	10	33
Louisiana.....	6	45	13	3		41	9	1		4	4	11	21	7	14
New York.....	75	644	71	13	9	265	129	68	3	31	30	42	94	31	63
Production only.....	47	201			3	73	53	36	2	8	9	10	10	7	3
Production and drilling of new wells.....	28	443	71	13	6	192	76	32	1	23	21	32	84	24	60
Ohio.....	124	3,380	581	126	151	3,591	333	135	19	69	129	453	2,805	487	2,318
Production only.....	69	221			28	1,047	137	87	15	27	23	232	678	13	665
Production and drilling of new wells.....	55	3,159	581	126	123	2,544	196	48	4	42	106	221	2,127	474	1,653
Oklahoma.....	40	168	53	20	11	166	55	12		24	19	31	80	46	34
Production only.....	14	24			1	24	13	3		6	4	4	7	6	1
Production and drilling of new wells.....	26	144	53	20	10	142	42	9		18	15	27	73	40	33
Pennsylvania.....	277	8,796	872	152	282	4,840	914	645	48	109	160	377	3,549	1,087	2,462
Production only.....	151	771			27	515	456	427	29	13	16	17	42	36	6
Production and drilling of new wells.....	126	8,027	872	152	255	4,325	458	218	19	96	144	360	3,507	1,051	2,456
West Virginia.....	66	392	139	16	4	497	123	68	1	14	41	117	257	78	179
Production only.....	28	75			1	88	58	44	1	3	11	4	26	2	24
Production and drilling of new wells.....	38	317	139	16	3	409	65	24		11	30	113	231	76	155
All other states <sup>1</sup> .....	25	274	82	25	5	80	29	13	1	6	10	14	37	18	19
Production only.....	13	46			1	21	14	10		2	2	4	3	3	
Production and drilling of new wells.....	12	228	82	25	4	59	15	3	1	4	8	10	34	15	19

<sup>1</sup> Includes 3 boys under 16 years of age, distributed as follows: Ohio, 2; Pennsylvania, 1.

<sup>2</sup> Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

## MINES AND QUARRIES.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909.

STATE AND CHARACTER OF OPERATIONS.	Number of operators.	NUMBER OF WELLS.					PERSONS ENGAGED IN INDUSTRY.								
		Completed Dec. 31, 1909.	Drilled in 1909.		Abandoned.	Aggregate.	Proprietors and officials.				Clerks and other subordinate salaried employees.	Wage earners, Dec. 15, or nearest representative day.			
			Total.	Dry.			Total.	Proprietors and firm members.		Salaried officers of corporations.		Superintendents and managers.	Total.	Men 16 years of age and over.	
								Total.	Number performing manual labor.					Enginers, firemen, mechanics, etc.	All other employees.
United States.....	1,207	18,271	2,654	613	981	13,690	4,022	3,061	82	418	543	1,277	8,391	2,202	6,189
Production only.....	797	3,258			235	3,310	2,115	1,862	52	131	122	313	882	120	762
Production and drilling of new wells.....	410	15,013	2,654	613	746	10,380	1,907	1,199	30	287	421	964	7,509	2,082	5,427
California.....	11	30	1	1	2	51	17	7		4	6	13	21	7	14
Illinois.....	12	103	42	10	22	73	15	8		2	5	14	44	25	19
Production only.....	4	12			6	7	3	3				4	4	3	1
Production and drilling of new wells.....	8	91	42	10	16	66	12	5		2	5	14	40	22	18
Indiana.....	457	2,252	213	61	264	2,551	2,232	2,039	4	121	72	62	257	108	149
Production only.....	408	1,298			107	1,414	1,310	1,210	3	60	40	27	77	25	52
Production and drilling of new wells.....	49	954	213	61	157	1,137	922	829	1	61	32	35	180	83	97
Kansas.....	99	2,028	563	181	251	1,453	142	51	5	30	61	132	1,179	298	881
Production only.....	41	511			59	87	45	22	2	11	12	11	31	25	6
Production and drilling of new wells.....	58	1,517	563	181	192	1,366	97	29	3	19	49	121	1,148	273	875
Kentucky.....	15	157	24	5		82	24	14	1	4	6	11	47	10	37
Production only.....	11	76				22	15	13			2	3	4		4
Production and drilling of new wells.....	4	81	24	5		60	9	1	1	4	4	8	43	10	33
Louisiana.....	6	45	13	3		41	9	1		4	4	11	21	7	14
New York.....	75	644	71	13	9	265	129	68	3	31	30	42	94	31	63
Production only.....	47	201			3	73	53	36	2	8	9	10	10	7	3
Production and drilling of new wells.....	28	443	71	13	6	192	76	32	1	23	21	32	84	24	60
Ohio.....	124	3,380	581	126	151	3,591	333	135	19	69	129	453	2,805	487	2,318
Production only.....	69	221			28	1,047	137	87	15	27	23	232	678	13	665
Production and drilling of new wells.....	55	3,159	581	126	123	2,544	196	48	4	42	106	221	2,127	474	1,653
Oklahoma.....	40	168	53	20	11	166	55	12		24	19	31	80	46	34
Production only.....	14	24			1	24	13	3		6	4	4	7	6	1
Production and drilling of new wells.....	26	144	53	20	10	142	42	9		18	15	27	73	40	33
Pennsylvania.....	277	8,798	872	152	262	4,840	914	645	48	109	160	377	3,549	1,037	2,462
Production only.....	151	771			27	515	456	427	29	13	16	17	42	36	6
Production and drilling of new wells.....	126	8,027	872	152	235	4,325	458	218	19	96	144	360	3,507	1,051	2,456
West Virginia.....	66	392	139	16	4	497	123	68	1	14	41	117	257	78	179
Production only.....	28	75			1	88	58	44	1	3	11	4	26	2	24
Production and drilling of new wells.....	38	317	139	16	3	409	65	24		11	30	113	231	76	155
All other states <sup>1</sup> .....	25	274	82	25	5	80	29	13	1	6	10	14	37	18	19
Production only.....	13	46			1	21	14	10		2	2	4	3	3	
Production and drilling of new wells.....	12	228	82	25	4	59	15	3	1	4	8	10	34	15	19

<sup>1</sup> Includes 3 boys under 16 years of age, distributed as follows: Ohio, 2; Pennsylvania, 1.<sup>2</sup> Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909—Continued.

STATE AND CHARACTER OF OPERATIONS.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.								
		Aggregate.	Services.				Supplies, fuel, and rent of power.			
			Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employees.	Wage earners.	Total.	Supplies and materials.	Fuel and rent of power.	Cost of purchased gas.
United States.....	\$243,097,379	\$32,326,067	\$8,057,968	\$1,319,470	\$1,004,008	\$3,734,490	\$14,261,414	\$8,334,762	\$152,977	\$7,773,675
Production only.....	28,597,213	6,102,302	899,234	214,733	280,265	404,236	4,497,337	236,375	12,544	4,245,418
Production and drilling of new wells.....	214,500,166	26,223,765	5,158,734	1,104,737	723,743	3,330,254	9,764,077	6,098,387	140,433	3,528,257
California.....	886,696	110,068	38,731	13,040	6,360	19,331	36,981	31,090	2,575	3,316
Illinois.....	684,066	153,375	49,503	12,140	12,123	25,240	38,334	25,187	434	12,713
Production only.....	11,066	974	765	.....	.....	765	34	.....	34	.....
Production and drilling of new wells.....	673,000	152,401	48,738	12,140	12,123	24,475	38,300	25,187	400	12,713
Indiana.....	12,330,907	783,769	295,456	111,413	38,502	145,541	142,433	66,363	53,475	22,595
Production only.....	2,064,991	208,033	90,845	34,651	10,547	45,647	34,014	16,220	3,304	14,490
Production and drilling of new wells.....	10,265,916	575,736	204,611	76,762	27,955	99,894	108,419	50,143	50,171	8,105
Kansas.....	32,903,112	3,798,717	713,407	160,980	121,263	431,164	1,099,605	827,364	2,696	269,545
Production only.....	890,687	148,429	50,842	23,444	6,466	20,932	44,822	8,433	815	34
Production and drilling of new wells.....	32,012,425	3,650,288	662,565	137,536	114,797	410,232	1,054,783	818,931	1,881	233,971
Kentucky.....	3,628,379	181,408	48,914	13,349	9,041	26,524	60,228	59,952	246	.....
Production only.....	1,530,745	57,869	5,263	1,883	500	2,880	20,359	20,334	25	.....
Production and drilling of new wells.....	2,097,634	123,539	43,651	11,466	8,541	23,644	39,869	39,618	221	.....
Louisiana.....	5,202,538	149,111	53,657	21,956	8,125	23,576	58,824	51,183	441	7,200
New York.....	3,166,460	490,360	109,757	46,104	20,591	43,062	190,717	122,772	2,289	65,656
Production only.....	568,105	41,704	15,074	7,235	2,782	5,057	7,394	4,144	.....	3,250
Production and drilling of new wells.....	2,598,355	448,656	94,683	38,869	17,809	38,005	183,323	118,628	2,289	62,406
Ohio.....	61,412,777	12,363,508	1,768,836	304,911	388,465	1,075,460	7,141,569	1,740,679	25,103	5,375,787
Production only.....	18,601,512	5,166,232	560,035	76,618	247,788	235,629	4,283,091	146,122	7,903	4,129,066
Production and drilling of new wells.....	42,811,265	7,197,276	1,208,801	228,293	140,677	839,831	2,858,478	1,594,557	17,200	1,246,721
Oklahoma.....	5,222,246	927,634	150,297	54,184	21,244	74,869	411,358	283,290	221	127,847
Production only.....	292,431	82,640	12,094	6,525	2,380	3,189	4,864	3,721	.....	1,143
Production and drilling of new wells.....	4,929,815	844,994	138,203	47,659	18,864	71,680	406,494	279,569	221	126,704
Pennsylvania.....	108,511,275	10,551,381	2,288,882	443,857	325,172	1,519,853	4,183,764	2,313,399	60,023	1,810,342
Production only.....	2,905,936	186,955	52,788	21,193	6,291	25,304	53,107	18,588	453	34,066
Production and drilling of new wells.....	105,605,339	10,364,426	2,236,094	422,664	318,881	1,494,549	4,130,657	2,294,811	59,570	1,776,276
West Virginia.....	7,461,986	2,277,343	493,158	119,266	44,266	329,628	630,039	583,566	3,112	43,361
Production only.....	1,033,187	219,036	98,523	33,684	1,080	63,759	36,257	5,589	.....	30,668
Production and drilling of new wells.....	6,428,799	2,058,307	394,635	85,582	43,186	265,867	593,782	577,977	3,112	12,693
All other states <sup>1</sup> .....	1,686,937	539,393	47,370	18,270	8,856	20,244	267,562	229,837	2,362	35,313
Production only.....	375,150	28,952	8,285	5,900	1,311	1,074	11,275	11,265	10	.....
Production and drilling of new wells.....	1,311,787	510,441	39,085	12,370	7,545	19,170	256,287	218,622	2,352	35,313

<sup>1</sup> Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

MINES AND QUARRIES.

NATURAL GAS—DETAILED STATISTICS OF ENTERPRISES, BY CHARACTER OF OPERATIONS AND BY STATES: 1909—Continued.

STATE AND CHARACTER OF OPERATIONS.	EXPENSES OF OPERATION AND DEVELOPMENT—continued.										PRODUCTS.			PRIMARY POWER OWNED.				
	Miscellaneous.					Per cent of total.					Total value <sup>1</sup> (dolls.).	Natural gas. <sup>1</sup>		Total horse power.	Steam engines.		Gas or gasoline engines.	
	Total (dolls.).	Contract work including compensation to part-time employees (dolls.).	Royalties and rent of wells (dolls.).	Taxes (dolls.).	Rent of offices and other sundry expenses (dolls.).	Services.	Supplies.	Contract work.	Royalties and rent of wells.	Other miscellaneous.		M cubic feet.	Value at well (dolls.).		Number.	Horsepower.	Number.	Horsepower.
<b>United States</b> .....	12,006,885	3,666,924	4,450,321	1,062,643	2,826,797	18.7	44.1	11.3	13.8	12.0	53,574,936	394,775,787	52,674,560	151,233	606	61,321	1,498	89,912
Production only.....	705,731	46,545	210,410	261,894	186,882	14.7	73.7	0.8	3.4	7.4	10,087,327	61,701,004	9,998,180	9,916	85	3,493	132	6,423
Production and drilling of new wells.....	11,300,954	3,620,379	4,239,911	800,749	2,639,915	19.7	37.2	13.8	16.2	13.2	43,487,609	333,074,783	42,676,380	141,317	521	57,828	1,366	83,489
<b>California</b> .....	34,356	2,448	207	8,345	23,356	35.2	33.6	2.2	0.2	28.8	158,596	189,956	158,596	136	2	116	1	20
<b>Illinois</b> .....	65,538	27,422	22,507	1,962	13,647	32.3	25.0	17.9	14.7	10.2	330,755	2,572,355	325,620	183	2	28	6	155
Production only.....	175	150	.....	.....	25	78.5	3.5	.....	15.4	2.6	2,733	1,776	2,632	28	2	.....	.....	.....
Production and drilling of new wells.....	65,363	27,422	22,357	1,962	13,622	32.0	25.1	18.0	14.7	10.2	328,022	2,570,579	322,988	155	.....	.....	6	155
<b>Indiana</b> .....	345,880	137,328	87,451	39,180	81,921	37.7	18.2	17.5	11.2	15.5	1,501,388	5,173,799	1,472,457	6,341	54	4,071	59	2,270
Production only.....	83,174	11,253	29,370	14,572	27,979	43.7	16.4	5.4	14.1	20.5	515,580	2,057,324	511,808	1,942	9	710	23	1,232
Production and drilling of new wells.....	262,706	126,075	58,081	24,608	53,942	35.5	18.8	21.9	10.1	13.6	985,808	3,116,475	960,649	4,399	45	3,361	36	1,038
<b>Kansas</b> .....	1,935,705	265,230	1,168,951	114,469	437,055	18.8	28.9	7.0	30.8	14.5	6,305,410	69,609,762	6,217,380	32,544	22	5,853	92	26,691
Production only.....	52,765	3,377	29,285	3,392	16,711	34.3	30.2	2.3	19.7	13.5	213,364	5,697,832	262,003	459	9	154	12	305
Production and drilling of new wells.....	1,932,940	261,853	1,139,666	111,077	420,344	18.2	28.9	7.2	31.2	14.6	5,992,046	63,911,930	5,955,377	32,085	13	5,699	80	26,386
<b>Kentucky</b> .....	72,266	21,283	20,618	17,314	13,051	27.0	33.2	11.7	11.4	16.7	479,837	2,100,325	478,685	1,344	3	55	22	1,289
Production only.....	32,247	5,810	12,927	7,854	5,656	9.1	33.2	10.0	22.3	23.3	233,310	1,171,811	232,158	91	1	25	7	66
Production and drilling of new wells.....	40,019	15,473	7,691	9,460	7,395	35.3	32.3	12.5	6.2	13.6	246,527	928,514	246,527	1,253	2	30	15	1,223
<b>Louisiana</b> .....	36,630	15,150	3,777	4,330	13,373	36.0	39.4	10.2	2.5	11.9	199,047	662,121	199,047	360	12	360	.....	.....
<b>New York</b> .....	189,886	87,021	46,729	27,072	29,064	22.4	38.9	17.7	9.5	11.4	772,481	3,020,316	766,647	814	11	307	53	507
Production only.....	19,236	3,527	3,891	3,780	3,038	36.1	17.7	8.5	21.3	16.3	79,938	314,785	79,938	203	.....	.....	6	203
Production and drilling of new wells.....	170,650	83,494	37,838	23,292	26,026	21.1	40.9	18.6	8.4	11.0	692,543	2,705,531	686,709	611	11	307	47	304
<b>Ohio</b> .....	3,453,103	1,086,757	1,118,981	463,204	784,161	14.3	57.8	8.8	9.1	10.1	18,409,641	96,870,533	18,216,751	31,522	73	8,149	127	23,373
Production only.....	323,106	6,673	22,878	215,303	78,252	10.8	82.9	0.1	0.4	5.7	7,377,062	31,326,394	7,357,439	5,427	14	1,520	22	3,907
Production and drilling of new wells.....	3,129,997	1,080,084	1,096,103	247,901	705,909	16.8	39.7	15.0	15.2	13.3	11,032,579	65,544,139	10,859,312	26,095	59	6,629	105	19,466
<b>Oklahoma</b> .....	365,979	178,180	46,755	46,075	94,969	16.2	44.3	19.2	5.0	15.2	1,126,884	18,745,834	1,126,884	137	6	112	1	25
Production only.....	15,682	966	4,182	3,315	7,219	37.1	14.9	3.0	12.8	32.3	53,864	732,496	53,864	20	1	20	.....	.....
Production and drilling of new wells.....	350,297	177,214	42,573	42,760	87,750	15.4	45.4	19.8	4.8	14.6	1,073,020	18,013,338	1,073,020	117	5	92	1	25
<b>Pennsylvania</b> .....	4,078,735	1,316,357	1,432,626	313,807	1,015,945	21.7	39.6	12.5	13.6	12.6	21,500,830	156,409,783	20,973,237	76,374	399	41,572	1,117	34,802
Production only.....	81,060	9,770	42,807	4,793	23,690	28.2	28.4	5.2	22.9	15.2	536,722	5,592,753	524,784	1,503	45	821	59	682
Production and drilling of new wells.....	3,997,675	1,306,587	1,389,819	309,014	992,255	21.6	39.9	12.6	13.4	12.6	20,964,108	150,817,030	20,448,453	74,871	354	40,751	1,058	34,120
<b>West Virginia</b> .....	1,154,146	384,883	445,061	23,272	300,930	21.7	27.7	16.9	19.5	14.2	2,460,473	36,589,513	2,459,251	989	17	473	4	516
Production only.....	84,256	1,611	56,987	7,599	18,059	45.0	16.6	0.7	26.0	11.7	892,686	14,069,425	892,686	55	2	55	.....	.....
Production and drilling of new wells.....	1,069,890	383,272	388,074	15,673	282,871	19.2	28.8	18.6	18.9	14.5	1,567,787	22,520,088	1,566,565	934	15	418	4	516
<b>All other states<sup>2</sup></b> .....	224,461	144,865	56,658	3,613	19,325	8.8	49.6	26.9	10.5	4.3	329,594	2,831,490	280,005	489	5	225	16	264
Production only.....	9,392	960	2,446	500	5,486	28.6	38.9	3.3	8.4	20.7	64,579	687,856	53,379	188	2	160	2	8
Production and drilling of new wells.....	215,069	143,905	54,212	3,113	13,839	7.7	50.2	28.2	10.6	3.3	275,015	2,163,634	226,628	321	3	65	14	256

<sup>1</sup> Includes duplications resulting from the purchase of natural gas by operators of gas wells.  
<sup>2</sup> Includes operators distributed as follows: Arkansas, 3; Colorado, 1; Missouri, 10; North Dakota, 1; South Dakota, 3; Tennessee, 1; Texas, 4; and Wyoming, 2.

# PETROLEUM AND NATURAL GAS.

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## DETAILED STATISTICS OF NONPRODUCING ENTERPRISES, BY STATES: 1909.

**Table 52**

STATE.	Number of operators.	Number of completed wells Dec. 31, 1909.	Capital.	GROSS ACREAGE.			PERSONS ENGAGED IN INDUSTRY.							Wage earners, Dec. 15, or nearest representative day.		
				Total.	Owned.	Held under lease.	Aggregate.	Proprietors and officials.				Clerks and other subordinate salaried employes.	Men 16 years of age and over.			
								Total.	Proprietors and firm members.		Salaried officers of corporations.		Superintendents and managers.	Total.	Engineers, firemen, mechanics, etc.	All other employees.
									Total.	Number performing manual labor.						
United States..	280	128	\$14,166,314	1,115,527	76,008	1,039,519	1,917	396	207	19	67	122	70	1,451	1,022	1,429
Alabama.....	3	0	49,500	11,202	2	11,200	33	3	1	1	1	1	1	30	30	30
California.....	168	24	11,004,813	103,707	51,750	51,957	1,411	198	46	16	51	101	61	1,152	837	315
Illinois.....	4	7	65,000	9,100	.....	9,100	14	11	10	.....	.....	.....	.....	3	3	3
Indiana.....	3	.....	25,412	1,298	.....	1,298	2	1	1	.....	.....	.....	.....	1	1	1
Ohio.....	7	15	89,850	4,870	465	4,411	10	7	5	.....	1	1	.....	3	3	3
Oklahoma.....	11	22	147,753	20,052	160	19,892	44	12	9	.....	1	2	2	30	25	5
Pennsylvania.....	14	17	34,757	3,269	110	3,159	96	95	95	2	.....	.....	.....	1	1	1
Texas.....	10	2	409,200	47,132	9,071	38,061	143	30	21	1	2	7	1	112	36	76
Utah.....	4	4	69,000	2,020	1,600	420	16	.....	.....	.....	.....	.....	1	15	15	.....
West Virginia.....	8	10	101,796	14,971	.....	14,971	19	13	9	.....	2	2	.....	6	2	4
Wyoming.....	7	17	710,590	161,260	4,800	156,460	37	11	1	.....	6	4	1	25	18	7
All other states <sup>1</sup> .....	12	4	558,673	736,640	8,050	728,590	92	15	9	.....	3	3	4	73	51	122

### EXPENSES OF OPERATION AND DEVELOPMENT.

STATE.	Aggregate.	Services.			Supplies, fuel, and rent of power.			Miscellaneous.				Per cent of total.				
		Total.	Salaried officers of corporations, superintendents, and managers.	Clerks and other subordinate salaried employes.	Wage earners.	Total.	Supplies.	Fuel and rent of power.	Total.	Contract work.	Royalties and rent of wells.	Taxes.	Rent of offices and other sundry expenses.	Services.	Supplies.	Miscellaneous.
United States....	\$7,044,383	\$1,219,081	\$191,155	\$25,543	\$1,002,383	\$5,136,316	\$4,937,764	\$198,552	\$688,986	\$303,162	\$64,680	\$26,203	\$294,941	17.3	72.9	9.8
Alabama.....	35,301	11,850	2,050	9,800	17,035	16,085	350	6,416	6,400	.....	16	.....	33.6	48.3	18.1	
California.....	6,244,528	1,001,687	134,557	22,423	844,707	4,828,208	4,659,533	168,675	414,633	127,044	27,989	24,083	235,512	16.0	77.3	6.6
Illinois.....	25,804	1,324	300	964	10,835	16,643	192	7,735	6,700	.....	37	998	5.1	65.0	29.9	
Indiana.....	14,100	.....	.....	.....	5,834	5,436	398	8,332	6,410	1,467	35	420	41.2	58.8	.....	
Ohio.....	64,610	601	240	451	18,557	18,514	43	45,362	34,023	9,383	105	1,851	1.1	28.7	70.2	
Oklahoma.....	77,431	11,512	1,250	1,000	10,162	32,446	31,728	718	33,473	28,403	254	2,291	14.9	41.9	43.2	
Pennsylvania.....	34,900	45	.....	45	14,327	14,259	68	20,618	19,192	933	.....	493	0.1	40.9	58.9	
Texas.....	130,575	52,538	5,465	300	46,773	68,002	46,572	19,430	12,035	.....	245	9,100	40.2	50.5	9.2	
Utah.....	47,250	16,944	.....	180	16,764	21,065	17,650	3,415	9,250	8,575	.....	225	450	35.9	44.6	19.6
West Virginia.....	82,752	2,034	1,705	1,220	24,924	24,909	15	54,894	46,638	7,566	100	500	3.5	30.1	66.3	
Wyoming.....	68,002	45,045	31,108	480	11,460	13,847	11,944	1,903	11,110	5,000	600	4,950	63.3	20.4	16.3	
All other states <sup>2</sup> .....	218,375	70,511	14,423	2,060	60,028	77,236	73,891	3,345	65,128	12,177	14,227	438	38,286	35.0	35.3	29.8

### NUMBER OF WAGE EARNERS EMPLOYED ON THE 15TH DAY OF—

### PRIMARY POWER OWNED.

STATE.	NUMBER OF WAGE EARNERS EMPLOYED ON THE 15TH DAY OF—												Total horsepower.	PRIMARY POWER OWNED.			
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		Steam engines.		Gas or gasoline engines.	
														Number.	Horsepower.	Number.	Horsepower.
United States..	552	603	682	746	766	838	894	905	925	1,035	1,167	1,208	8,577	303	8,062	32	515
Alabama.....	0	0	0	0	0	6	6	6	6	24	24	24	180	6	180	.....	195
California.....	445	477	542	571	609	628	671	721	772	860	970	1,025	6,517	238	6,322	10	87
Illinois.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	87	.....	.....	.....	.....
Indiana.....	1	1	1	6	1	1	1	1	1	1	1	1	66	1	40	1	25
Ohio.....	.....	.....	.....	2	2	1	1	1	.....	.....	3	3	50	2	30	1	20
Oklahoma.....	3	3	7	7	7	11	11	16	16	15	32	30	120	6	120	.....	.....
Pennsylvania.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71	3	50	3	21
Texas.....	44	52	52	53	49	63	59	47	47	53	58	62	615	21	533	8	82
Utah.....	16	14	21	21	11	13	15	7	7	6	3	3	97	4	97	.....	.....
West Virginia.....	12	.....	.....	.....	.....	.....	12	5	9	9	5	5	75	2	50	1	25
Wyoming.....	5	6	6	20	23	24	20	12	12	11	3	4	179	6	179	.....	.....
All other states <sup>2</sup> .....	32	44	47	60	64	91	97	88	59	53	61	47	521	14	461	4	60

<sup>1</sup> Includes 4 boys under 16 years of age.  
<sup>2</sup> Includes operators as follows: Arizona, 1; Arkansas, 1; Colorado, 2; Kentucky, 2; Louisiana, 2; Montana, 1; New York, 2; Oregon, 1.