

Bulletin 516
BUREAU OF MINES

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

(COLLECTED DURING THE FISCAL YEARS 1948 TO 1950
INCLUSIVE)

By N. H. Snyder and S. J. Aresco



UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, Secretary

BUREAU OF MINES

J. J. Forbes, Director

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Foreword

One of the important functions of the Bureau of Mines is the determination of authoritative analyses of coal from mines of all producing fields in the United States and the dissemination of this information to the general public, industry, and Federal coal-purchasing agents. Many coal analyses lose their essential value within a short time owing to changing mining practices, increase in mechanical mining, adoption of different methods of coal preparation, and opening of new mines and closing down of old. Coal analyses should be made available at once if they are to serve their fullest purpose.

To meet this need the Bureau of Mines maintains a public file into which are entered new coal analyses as soon as they are determined. This file is available for reference, however, only in Washington, D. C., and is therefore not an ideal means of disseminating information throughout the United States. In the past the Bureau has issued publications giving information on coal geology, mining, and analyses, including analyses of coal at the face, as shipped at the tippie, and as delivered in a specific State or States. Owing to the time required to prepare and print such a publication, the coal analyses had completely lost their value for many commercial purposes.

This bulletin is the first of a new series, which includes analyses of only tippie and delivered coal. It covers samples collected throughout the United States from July 1, 1947, to June 30, 1950 (fiscal years 1948-50). It is planned that future publications of this series will cover a period of one fiscal year only and be issued as soon as possible after June 30 of each year. It is hoped that the new series will improve the Bureau's coal analytical service to the public and industry.

J. F. BARKLEY,
Chief, Fuels Utilization Branch.

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(COLLECTED DURING THE FISCAL YEARS 1948 TO 1950, INCLUSIVE)

By

N. H. Snyder² and S. J. Aresco³

Introduction

THE Bureau of Mines has been active in promoting the purchase of coal for Government use under specifications that define the requirements in terms of heating value of the coal, expressed in British thermal units, and the composition as shown by proximate analyses. To these, when required, are added the fusing temperature of ash, Hardgrove grindability index, and the free-swelling index. Under most of these specification contracts the bidders guarantee the quality of coal, and that guaranteed by the successful bidder becomes the standard of his contract. The deliveries are sampled in accordance with instructions⁴ issued by the Bureau; the samples are analyzed in the Bureau's laboratory to determine whether the coal is of the quality guaranteed by the contractor and, if it is not, a price adjustment is made.

Analyses of delivered coal and "tipple" samples (samples collected at mine tipples as coal is being loaded into railroad cars or trucks) are valuable data for use in evaluating future bids. Moreover, the continuous sampling of coal as delivered is a check on the practical results obtained in burning the coal.

The Government purchases 5 to 6 million tons of coal a year. In connection with these

purchases, the Bureau analyzes approximately 11,000 samples a year. These analyses are published from time to time for the use of Government officials and the public. A series of technical papers has been completed on coal analyses by States or, where production is small in any one State, by groups of adjacent States. In addition to analytical data showing composition and quality of coals of the States, the publications contain brief descriptions of the geological structure of the coal basins and typical mining conditions in the various districts, discuss the principal economic data of the industry, and show the relationship of mine or face samples to delivered and tipple samples. The present bulletin covers many States but deals only with the analytical data of the coals.

The technical papers published by States, with their numbers, are as follows: Alabama, 347; Alaska, 682; Arizona, California, Idaho, Nevada, and Oregon, 696; Arkansas 416; Colorado, 574; Illinois, 641; Indiana, 417; Iowa, 269 and 706; Kansas, 455; Kentucky, 308 and 652; Maryland, 465; Michigan, North Dakota, South Dakota, and Texas, 700; Missouri, 366; Montana, 529; New Mexico, 569; Ohio, 344 (and Bulletin 499); Oklahoma, 411; Pennsylvania Bituminous, 590 (Supplement 645); Pennsylvania Anthracitic, 659; Tennessee, 356 and 671; Utah, 345; Virginia, 365 and 656; Washington, 491 (Supplement 618); West Virginia, 405 and 626; and Wyoming, 484.

¹ Work on manuscript completed September 1951.

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⁴ Snyder, N. H., Handbook on Coal Sampling (Revision of Technical Paper 133): Bureau of Mines, 1950, 10 pp.

EXPLANATION OF TABLE OF ANALYSES

The analyses in table 3 are arranged alphabetically with respect to States, counties, towns, and mines and are grouped as follows:

1. Proximate analysis—moisture, volatile matter, fixed carbon, and ash.
2. Ultimate analysis—ash, sulfur, hydrogen, carbon nitrogen, and oxygen.
3. Calorific value:
 - (a) B. t. u., as received.
 - (b) B. t. u., dry.
4. Softening temperature of ash, when such determinations were made.
5. Agglomerating index, when such tests were made.
6. Free-swelling index, when such tests were made.
7. Hardgrove grindability index, when such tests were made.

The analyses are given to the nearest 0.1 percent and the British thermal units to the nearest 10, although the laboratory determinations are recorded to the nearest 0.01 percent and the nearest British thermal unit.

The tipple samples were taken by engineers of the Bureau of Mines at the mine tipple or breaker as the coal was loaded into railroad cars or trucks. These samples represent as nearly as possible the quality of the coal as shipped. They are designated in column 6 as "tipple"; individual analyses are given for them.

The delivered samples were collected systematically throughout all deliveries by representatives of the Government departments under directions supplied by the Bureau of Mines. Yearly average analyses are given for these samples.

In column 24 of table 3 the Government fiscal year is meant. For example, fiscal year 1949 refers to the fiscal year begun July 1, 1948, and ended June 30, 1949.

AGGLOMERATING INDEX

The agglomerating index roughly indicates the caking properties of coal. It is determined by visual and physical examination of the residue from the standard volatile-matter determination. Column 21 in table 3 gives the

agglomerating index. All coals analyzed since November 15, 1934 (laboratory No. B300), have been classified according to agglomerating properties as follows:

TABLE 1.—*Agglomerating and caking properties of coals based on examination of residue incident to the volatile-matter determination*

Designation		Appearance of residue from standard method for determination of volatile matter in coal
Class	Group	
<p>Nonagglomerating¹—button shows no swelling or cell structure and will not support a 500-gram weight without pulverizing.</p>	<p>NA (nonagglomerate)-----</p>	<p>{ NAa—noncoherent residue. NAb—coke button shows no swelling or cell structure and after careful removal from the crucible will pulverize under a weight of 500 grams carefully lowered on button. Aw (weak agglomerate)—buttons come out of crucible in more than one piece. Af (firm agglomerate)—buttons come out of crucible in one piece. Cp (poor caking)—button shows slight swelling with small cells; has slight gray luster. Cf (fair caking)—button shows medium swelling and good cell structure; has characteristic metallic luster. Cg (good caking)—button shows strong swelling and pronounced cell structure, with numerous large cells and cavities; has characteristic metallic luster.</p>
<p>Agglomerating¹—button shows swelling or cell structure or will support a 500-gram weight without pulverizing.</p>	<p>{ A (agglomerate)—button dull black and sintered; shows no swelling or cell structure; will support a 500-gram weight without pulverizing. C (caking)—button shows swelling or cell structure.</p>	

¹ Agglomerating index—coals which in the volatile-matter determination produce either an agglomerate button that will support a 500-gram weight without pulverizing or a button showing swelling or cell structure are classified as agglomerating.

CLASSIFICATION OF COALS BY RANK

All mine samples analyzed since 1913 have been classified by rank, that is, according to their degree of metamorphism or progressive alteration in the natural series from lignite to anthracite. This classification conforms to the Standard Specifications for Classification of Coals by Rank (D 388-38) of the American Society for Testing Materials⁵ to which speci-

cations reference should be made for more-detailed information than given herein.

A coal containing more than 69 percent dry, mineral-matter-free fixed carbon is classified according to fixed carbon; but one containing less than 69 percent is classified according to moist, mineral-matter-free B. t. u. Weathering and agglomerating properties are used to differentiate between certain adjacent groups. Table 2 shows the various divisions.

⁴ American Society for Testing Materials, Standard Specifications for Classification of Coals by Rank: A. S. T. M. Designation D 388-38; A. S. A. M20.1-1938.

TABLE 2.—*Classification of coals by rank*¹

[Legend: FC=fixed carbon. VM=volatile matter. B. t. u.=British thermal units]

Class	Group	Limits of fixed carbon or B. t. u., mineral-matter-free basis	Requisite physical properties
I. Anthracitic.....	1. Meta-anthracite.....	Dry FC, 98 percent or more (dry VM, 2 percent or less).	Nonagglomerating. ²
	2. Anthracite.....	Dry FC, 92 percent or more and less than 98 percent (dry VM, 8 percent or less and more than 2 percent).	
	3. Semianthracite.....	Dry FC, 86 percent or more and less than 92 percent (dry VM, 14 percent or less and more than 8 percent).	
II. Bituminous ³	1. Low-volatile bituminous coal.	Dry FC, 78 percent or more and less than 86 percent (dry VM, 22 percent or less and more than 14 percent).	Either agglomerating or nonweathering. ⁶ Both weathering and nonagglomerating.
	2. Medium-volatile bituminous coal	Dry FC, 69 percent or more and less than 78 percent (dry VM, 31 percent or less and more than 22 percent).	
	3. High-volatile A bituminous coal.	Dry FC, less than 69 percent (dry VM, more than 31 percent); and moist ⁴ B. t. u., 14,000 ⁵ or more.	
	4. High-volatile B bituminous coal.	Moist ⁴ B. t. u., 13,000 or more and less than 14,000. ⁵	
	5. High-volatile C bituminous coal.	Moist B. t. u., 11,000 or more and less than 13,000. ⁵	
III. Subbituminous.....	1. Subbituminous A coal.....	do. ⁵	Consolidated. Unconsolidated.
	2. Subbituminous B coal.....	Moist B. t. u., 9,500 or more and less than 11,000. ⁵	
	3. Subbituminous C coal.....	Moist B. t. u., 8,300 or more and less than 9,500. ⁵	
IV. Lignitic.....	1. Lignite.....	Moist B. t. u., less than 8,300	do
	2. Brown coal.....	do	

¹ This classification does not include a few coals that have unusual physical and chemical properties and that come within the limits of fixed carbon or B. t. u. of the high-volatile bituminous and subbituminous ranks. All of these coals either contain less than 48 percent dry, mineral-matter-free fixed carbon or have more than 15,500 moist, mineral-matter-free B. t. u.

² If agglomerating, the coal is classified in low-volatile group of bituminous class.

³ It is recognized that there may be noncaking varieties in each group of the bituminous class.

⁴ Moist B. t. u. refers to coal containing its natural bed moisture but not including visible water on the surface of the coal.

⁵ Coal containing 69 percent or more fixed carbon on the dry, mineral-matter-free basis shall be classified according to fixed carbon, regardless of B. t. u.

⁶ There are three varieties of coal in the high-volatile C bituminous-coal group, namely: (1) Agglomerating and nonweathering; (2) agglomerating and weathering; (3) nonagglomerating and nonweathering.

EXPLANATION OF SYMBOLS USED IN TABLE OF ANALYSES

Rank (column 3, table 3):

An—anthracite.
Sa—semianthracite.
Lvb—low-volatile bituminous.
Mvb—medium-volatile bituminous.
Hvab—high-volatile A bituminous.
Hvbb—high-volatile B bituminous.
Hvcb—high-volatile C bituminous.
Suba—subbituminous A.
Subb—subbituminous B.
Subc—subbituminous C.
Lig—lignite.

Size of coal (column 4, table 3):

AC—air-cleaned.
OT—oil-treated.
W—washed.

Kind of sample (column 6, table 3):

T—tipple or breaker sample.
D—delivered sample.

Agglomerating index (column 21, table 3):

NAa—nonagglomerate, noncoherent residue.
NAb—nonagglomerate, coherent residue.
Aw—weak agglomerate.
Af—firm agglomerate.
Cp—poor caking.
Cf—fair caking.
Cg—good caking.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES
 TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent		Ultimate, percent						Calorific value		Number of analyses ²	Ash-softening temperature, F.	Number of ash-softening temperatures ³	Agglomerating index ^{1,3}	Free-swelling index	Hardgrove grindability index	Date
						Moisture as-received coal	Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis							
ALABAMA																						
BIBB COUNTY																						
Marvel	Clark (Woodstock)		¾- by 1½-inch (W) 0 by 1½-inch	282	D	1.9	36.6	56.5	6.9	0.6					14,010	14,280	1,218	1	Cf		Fiscal year 1948.	
Do.	do.		do.	236	D	2.5	35.9	54.7	9.4	.9				13,410	13,750	2,220	1	Cf		Do.		
Piper	Thompson		do.	565	D	2.6	36.5	54.3	9.2	.9				13,180	13,530	4		Cf		Fiscal year 1949.		
Do.	do.		do.	5	T	2.0	39.0	57.5	3.5	.5				14,470	14,780	1,220	1	Cf		June 20, 1950.		
West Blocton:	Clark (Woodstock)	Hvab	10-inch lump	25	T	2.0	38.1	58.6	3.3	.3				14,510	14,800	1,230	1	Cf		Do.		
Do.	do.	Hvab	4- by 10-inch	25	T	2.9	37.1	58.6	4.3	.5				14,260	14,680	1,240	1	Cf		Do.		
Do.	do.		1½- by 4-inch (W)	25	T	3.7	36.4	58.3	6.3	.7				13,940	14,470	1,230	1	Cf		Do.		
Do.	do.		1- by 1½-inch (W)	25	T	5.4	36.0	57.5	6.5	.8				13,470	14,230	1,230	1	Cf		Do.		
Do.	do.		¾- by 1-inch (W)	50	T	7.1	35.1	56.6	8.3	1.0				12,960	13,260	3		Cf	5½	Do.		
Hills Creek	do.		0 by ½-inch (W)	1,255	D	3.5	35.1	57.2	7.7	1.1				13,550	14,040	3		Cf (2), Cg (1)		Fiscal year 1948.		
Do.	do.		Run-of-mine	905	D	3.2	34.8	56.2	9.0	1.2				13,370	13,810	3		Cf		Fiscal year 1949.		
Do.	do.		do.	1,830	D	3.0	35.4	54.8	9.8	1.4				13,140	13,550	2,250	2	Cf		Fiscal year 1948.		
BLOUNT COUNTY																						
Inland: Blackburn	Inland and Blackburn	Hvab	Run-of-mine (crushed to 4-inch)	118	T	2.6	31.2	54.1	14.7	1.2				12,540	12,880	1,250	1	Cf	6		May 19, 1950.	
JEFFERSON COUNTY																						
Adamsville: David-son-Pratt	Pratt and Mary Lee		Run-of-mine	300	D	2.8	30.9	56.4	12.7	2.5				12,890	13,260	1		Cg		Fiscal year 1948.		
Blossburg	Pratt		1½- by 4-inch (W)	362	D	2.1	30.0	63.6	6.4	1.8				14,280	14,590	4		Cf (1), Cg (3)		Do.		
Do.	do.		do.	181	D	1.1	29.5	64.5	6.0	1.7				14,480	14,640	4		Cf (1), Cg (3)		Fiscal year 1949.		
Do.	do.		do.	164	D	1.7	29.8	64.3	5.9	1.7				14,370	14,620	3		Cf (1), Cg (2)		Fiscal year 1950.		
Do.	do.		do.	1	D	2.7	37.7	56.2	6.1	.5				13,700	14,080	4		Cf		Do.		
Leeds:	Red Diamond		1½- by 3-inch	1,200	D	2.1	36.8	58.2	5.0	.7				13,940	14,240	3		Cf		Do.		
Do.	do.		1- by 3-inch	600	D	2.2	36.8	58.2	5.0	.7				13,650	14,110	2		Cf		Do.		
Do.	do.		¾- by 1½-inch	313	D	3.2	36.7	57.5	5.8	.9				13,660	14,110	2		Cf		Do.		
Do.	do.		¾- by 1½-inch (W)	1,374	D	3.4	35.9	58.6	5.5	.7				13,660	14,140	10,210	7	Cf (9), Cp (1)		Do.		
MARION COUNTY																						
Brilliant:	Black Creek	Hvab	6-inch lump	16	T	4.6	41.6	56.1	2.3	.7				13,840	14,510	1,240	1	Cf		June 15, 1950.		
Do.	do.	Hvab	2- by 6-inch	10	T	5.1	39.5	58.0	2.2	.8				13,080	14,420	1,240	1	Cf		Do.		
Do.	do.		¾- by 1½-inch (W)	24	T	9.9	39.7	56.8	3.5	.8				12,780	14,190	1,230	1	Cp		Do.		
Do.	do.		0 by 2-inch	24	T	6.4	36.5	58.8	4.7	.8				13,660	13,960	1,230	1	Cp		Do.		

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

County	Locality	Sample Description	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis	Notes	Date
SHELBY COUNTY	Boothton: Boothton Nos. 1, 2, 3, and 4.	Clark and Gholson.	49 D	1.730.758.1	5.2	5	14,040.14,280	1	Cf	Fiscal year 1949.
		Do.	223 D	1.936.757.9	5.4	6	14,110.14,300	1	Cf	Fiscal year 1948.
		Do.	903 D	1.737.558.3	4.4	6	14,320.14,370	8	Cf	Fiscal year 1949.
		Do.	100 D	1.938.958.5	5.5	7	14,040.14,310	1	Cf	Do.
		Do.	47 D	1.837.157.9	5.0	6	14,170.14,430	2	Cf	Fiscal year 1948.
		Do.	191 D	2.138.357.3	4.4	6	14,310.14,620	2	Cf	Do.
		Do.	296 D	1.736.358.4	5.3	6	14,110.14,350	7	Cf(6), Cp(1), Cg(1)	Fiscal year 1949.
		Do.	42 D	2.234.157.3	8.6	8	13,580.13,890	1	Cf	Fiscal year 1950.
		Do.	1,919 D	2.835.457.8	6.8	6	13,770.14,170	5	Cf	Fiscal year 1948.
		Do.	585 D	3.334.756.6	8.7	8	13,410.13,870	2	Cf	Fiscal year 1949.
TUSCALOOSA COUNTY	Brookwood: Avery Mitchell No. 2.	Milldale.	168 D	2.531.255.7	13.1	1.6	12,680.13,000	1	Cf	Do.
		Do.	300 T	2.633.260.3	6.5	1.7	4.8 14,090.14,470	1 2,230	Cg	Apr. 17, 1950.
		Do.	300 D	2.331.051.0	18.0	3.5	12,080.12,360	1	Cg	Fiscal year 1948.
		Do.	70 T	3.532.754.0	13.3	1.2	12,540.12,990	1 2,810+	Cf	June 19, 1950.
		Do.	35 T	3.036.460.6	3.0	1.2	14,250.14,690	1 2,340	Cf	Do.
		Do.	45 T	5.035.859.3	4.9	1.3	13,670.14,390	1 2,080	Cf	Do.
		Do.	500 D	2.235.053.9	11.1	1.6	12,970.13,260	2	Cf	Fiscal year 1948.
		Do.	1,124 D	2.035.853.9	10.3	1.4	13,100.13,370	1	Cf	Fiscal year 1949.
		Do.	500 D	2.835.563.2	11.3	1.4	12,750.13,120	1 2,730	Cf	Do.
		Do.	104 D	2.932.650.6	16.8	.8	11,810.12,160	2	Cp	Do.
WALKER COUNTY	America: America No. 5.	1 1/2- by 4-inch (W).	500 D	2.235.053.9	11.1	1.6	12,970.13,260	2	Cf	Fiscal year 1948.
		Do.	1,124 D	2.035.853.9	10.3	1.4	13,100.13,370	1	Cf	Fiscal year 1949.
		Do.	500 D	2.835.563.2	11.3	1.4	12,750.13,120	1 2,730	Cf	Do.
		Do.	104 D	2.932.650.6	16.8	.8	11,810.12,160	2	Cp	Do.
		Do.	104 D	2.932.650.6	16.8	.8	11,810.12,160	2	Cp	Do.
		Do.	90 D	2.333.850.2	16.0	1.1	12,110.12,400	2	Cf	Fiscal year 1948.
		Do.	155 D	2.131.854.5	13.7	7	12,620.12,890	3	Cf(2), Cg(1)	Do.
		Do.	413 D	2.432.354.4	13.3	.7	12,630.12,930	1	Cf	Fiscal year 1949.
		Do.	35 T	3.338.555.8	5.7	1.7	13,550.14,010	1 2,260	Cf	June 23, 1950.
		Do.	75 T	3.340.954.6	4.5	1.8	13,710.14,180	1 2,250	Cf	Do.
Jasper:	Marigold Taylor.	3- by 6-inch.	100 T	3.930.955.4	4.1	1.8	13,540.14,240	1 2,230	Cf	Do.
		Do.	100 T	3.938.455.1	4.5	1.9	13,710.14,170	1 2,230	Cf	Do.
		Do.	698 D	3.338.455.8	4.8	1.7	13,570.14,090	4 2,320	Cf(3), Cp(1)	Fiscal year 1948.
		Do.	334 D	4.838.356.4	5.3	1.7	13,290.13,960	3	Cf(1), Cp(2)	Fiscal year 1949.
		Do.	100 T	3.639.655.7	4.7	1.7	13,580.14,090	1 2,220	Cf	June 22, 1950.
		Do.	2,297 D	2.839.754.1	6.2	2.1	13,550.13,940	3	Cf	Fiscal year 1949.
		Do.	80 D	3.732.952.7	14.4	.6	12,040.12,500	1	Cp	Do.
		Do.	161 D	2.632.751.6	15.7	.6	11,960.12,310	1	Cp	Do.
		Do.	228 T	3.433.951.2	14.9	.7	12,050.12,470	1 2,910+	Cp	May 31, 1950.
		Do.	1,646 D	4.938.756.0	5.3	1.3	13,220.13,900	2 2,260	Cp	Fiscal year 1948.
Nauvoo:	Deepwater Galloway-Jagger.	0 by 1 1/2-inch.	75 T	4.135.657.4	7.0	8	8.8 12,960.13,550	1 2,910+	Cp	June 27, 1950.
		Do.	40 T	4.435.857.0	7.2	7	12,920.13,520	1	Cp	Do.
		Do.	514 D	4.634.257.8	8.0	6	12,760.13,380	5	Cp	Fiscal year 1950.
		Do.	70 T	4.234.358.1	7.2	6	12,970.13,550	1 2,910+	Cp	June 27, 1950.
		Do.	110 T	5.734.357.7	8.0	9	12,640.13,400	1 2,910+	Cp	Do.
		Do.	5,782 D	5.834.357.7	8.0	7	12,520.13,290	10 2,910+	Cp	Do.
		Do.	500 D	3.335.855.9	8.3	.8	12,880.13,350	3	Cp	Fiscal year 1949.
		Do.	200 D	3.537.855.9	6.3	1.1	13,270.13,740	1	Cp	Do.
		Do.	3,793 D	3.936.056.8	7.2	.8	13,000.13,530	9	Cf(2), Cp(7)	Do.
		Do.	4,064 D	6.534.456.4	9.2	1.0	12,350.13,210	8	Cf(3), Cp(7)	Do.
Winston No. 2.	Radiant.	0 by 1 1/2-inch.	1,406 D	4.534.456.8	8.8	.7	13,660.14,260	20	Cf(1), Cp(17)	Fiscal year 1948.
		Do.	1,245 D	4.737.656.1	6.3	1.2	13,090.13,740	1 2,370	Cp	Fiscal year 1949.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	3 2,260	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.
		Do.	645 D	8.237.856.5	5.7	1.2	12,170.13,260	1	Ap	Fiscal year 1950.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample Description	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis Date	Notes							
Red Canon	3-inch lump	14.140	0.54	8.5	2.2	12,750	Sept. 22, 1947	NAB							
	1½-by 3-inch	14.540	2.54	1.5	7.7	12,590	Do.	NAB							
	¾-by 1½-inch	13.536	8.52	9.7	3.7	12,640	Do.	NAB							
	¾-by ¾-inch	20.038	3.52	7.8	8.0	12,700	Do.	NAB							
	Top	17.539	1.53	1.7	8.1	12,570	Do.	NAB							
	3-inch lump	14.639	4.55	3.5	6.6	12,510	Do.	NAB							
	1½-by 3-inch	14.640	4.54	3.5	6.6	12,510	Do.	NAB							
	¾-by 1½-inch	13.536	8.53	1.7	3.3	12,660	Do.	NAB							
	¾-by ¾-inch	15.438	3.54	7.0	7.7	12,520	Do.	NAB							
	0 by ¾-inch	18.638	3.54	2.7	4.4	12,540	Do.	NAB							
Paonia	3-inch lump	10.638	0.49	1.2	9.9	12,910	Oct. 27, 1947	NAB							
	1½-by 3-inch	10.737	7.48	4.13	9.9	12,910	Do.	NAB							
	0 by 1½-inch	14.636	6.49	7.13	7.7	12,910	Do.	NAB							
	Hvcb	9.242	3.54	5.3	3.2	12,700	Oct. 31, 1947	Cp							
	Hvcb	9.242	0.54	2.3	3.8	12,760	Do.	Cp							
	ELBERT COUNTY														
	Matheson: White Ash	Run-of-mine	32.942	2.45	8.12	0.7	4.5	64.8	1.3	16.7	7.340	9.430	12,280	Mar. 26, 1948	NAA
	EL PASO COUNTY	Colorado Springs: City No. 4	24.744	0.47	6.8	8.4	8,660	11,500	Aug. 27, 1947	NAA					
		Subc	24.745	2.48	5.8	8.3	8,570	11,380	Do.	NAA					
		Subc	24.442	3.45	8.1	7.7	8,270	10,930	Do.	NAA					
Subc		25.244	6.45	10.4	4.5	8,360	11,180	Do.	NAA						
Subc		26.241	1.46	5.12	4.4	8,040	10,980	Do.	NAA						
Subb		23.141	6.49	5.8	9.9	8,090	11,750	Do.	NAA						
Subb		22.340	7.47	3.2	0.4	8,830	11,360	Do.	NAA						
Subb		22.739	8.44	9.15	3.3	8,410	10,880	Do.	NAA						
Subb		22.639	8.45	1.15	1.4	8,370	10,820	Do.	NAA						
Subb		24.143	0.49	4.7	6.4	8,620	11,360	Do.	NAA						
FREMONT COUNTY	Lower Jack O'Lantern	24.242	3.50	0.7	4.4	8,570	11,310	Sept. 2, 1947	NAA						
	Run-of-mine	10.0	1.42	6.50	4.7	8,650	11,540	Fiscal year 1948	NAA						
	Subc	25.142	6.50	4.7	0.4	9,310	11,480	Fiscal year 1949	NAA						
	Subc	18.5	1.43	0.49	7.4	8,600	11,390	Fiscal year 1949	NAA						
	Subc	20.0	1.43	0.49	7.4	8,570	11,410	Do.	NAA						
	Subc	24.143	2.49	8.0	4.4	8,800	11,300	Do.	NAA						
	Subc	22.143	2.49	8.0	4.4	8,800	11,300	Do.	NAA						
	Subc	24.240	9.48	9.10	2.5	8,460	11,170	Do.	NAA						
	Subc	24.240	9.48	9.10	2.5	8,460	11,170	Do.	NAA						
	Subc	24.240	9.48	9.10	2.5	8,460	11,170	Do.	NAA						
GARFIELD COUNTY	South Canon No. 1	6.742	8.54	9.2	3.3	12,220	July 21, 1947	Cp							
	Hvbb	6.642	7.53	8.3	3.5	12,420	Do.	Cp							
	Hvbb	6.442	7.53	7.3	3.6	12,570	Do.	Cp							
	Hvbb	5.542	8.53	7.3	3.5	12,380	Do.	Cp							
	Hvbb	5.542	8.53	7.3	3.5	12,380	Do.	Cp							
	Hvbb	5.239	9.49	6.10	5.1	20,220	Do.	Cp							
	Hvbb	7.542	2.53	7.4	4.1	12,710	Do.	Cp							
	Hvbb	7.542	2.53	7.4	4.1	12,710	Do.	Cp							
	Hvbb	7.542	2.53	7.4	4.1	12,710	Do.	Cp							
	Hvbb	7.542	2.53	7.4	4.1	12,710	Do.	Cp							

Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipple and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank	Size of coal	Approximate tons sampled	Kind of sample	Proximate, percent			Ultimate, percent						Caloric value		Number of analyses	Ash-softening temperature, °F.	Number of ash-softening temperatures	Agglomerating Index ¹	Free-swelling Index	Hardgrove grindability Index	Date
						Moisture	Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
COLORADO—Continued																							
GUNNSON COUNTY																							
Baldwin:																							
Baldwin Star			1½-inch lump	10	T	12.7	41.7	52.6	5.7	0.9	5.3	72.9	1.6	13.6	11,360	13,010	12,200	1	NAB				Oct. 10, 1947.
Do.			0 by 1½-inch	8	T	12.3	42.4	50.9	6.7	1.3					11,290	12,860	12,130	1	NAB				Do.
Kubler (New Baldwin)			6-inch lump	25	T	9.0	38.7	55.4	5.9	5.5	5.2	75.2	1.6	11.6	12,050	13,240	12,830	1	NAB				Oct. 7, 1947.
Do.			1½ by 6-inch	25	T	8.5	38.3	55.7	6.0	4.4					12,140	13,270	12,310	1	NAB				Do.
Do.			0 by 1½-inch	25	T	9.0	38.8	52.4	9.1	4.4					11,550	12,690	12,380	1	NAB				Do.
Nu-Mine			Run-of-mine (crushed to 1½-inch)	25	T	10.7	41.6	50.6	7.8	6.6					11,400	12,840	12,290	1	NAB				Oct. 9, 1947.
Do.			3-inch lump	25	T	10.3	41.8	53.1	5.1	6.5	74.1	1.7	13.1	11,890	13,260	12,270	1	NAB				Do.	
Do.			1½ by 3-inch	25	T	10.3	40.9	53.4	5.7	8.8					11,810	13,120	12,190	1	NAB				Do.
Somerset:			3-inch lump	100	T	5.4	41.1	53.4	5.5	5.5	76.3	1.7	10.5	12,870	13,900	12,630	1	Cp				Oct. 28, 1947.	
Bear:			do.	46	D	5.3	40.9	53.8	5.3	5.5					12,980	13,700	12,400	1	Cp				Fiscal year 1948.
Do.			do.	37	D	4.5	41.9	54.9	3.2	4.4					13,380	14,000	12,720	1	Cp				Fiscal year 1949.
Do.			1½ by 3-inch	80	T	5.4	41.3	52.9	5.8	5.5					12,900	13,630	12,650	10	Cf (2), Cp (3)				Oct. 28, 1947.
Do.			do.	1,108	D	5.2	40.0	52.9	7.1	5.5					12,760	13,460	12,610	10	Cf (2), Cp (3)				Fiscal year 1948.
Do.			0 by 1½-inch	75	T	5.8	41.1	53.2	5.7	5.5					12,810	13,900	12,610	1	Cp				Oct. 28, 1947.
Do.			do.	197	D	5.3	40.5	52.9	6.6	5.5					12,800	13,520	12,570	1	Cp				Oct. 28, 1947.
Edwards:			0 by 1½-inch	47	D	4.8	40.0	50.9	9.1	4.4					12,300	12,920	12,400	1	Cp				Do.
Do.			1½ by 6-inch	1,784	D	5.0	40.0	50.9	9.1	4.4					12,480	13,140	12,400	1	Cp				Do.
Hawk's Nest:			do.	222	D	5.3	40.6	53.9	5.5	5.5					12,910	13,580	12,400	1	Cp				Nov. 4, 1947.
Oliver No. 2:			8-inch lump	60	T	5.8	40.9	53.7	5.4	5.5	77.2	1.6	10.1	12,800	13,580	12,760	1	Cp					Fiscal year 1949.
Do.			3-inch lump	42	T	5.9	40.4	52.6	7.0	5.5					12,540	13,320	12,760	1	Cp				Nov. 4, 1947.
Do.			1½ by 8-inch	70	T	5.8	40.1	52.6	7.3	5.4					12,520	13,290	12,810+	1	Cp				Fiscal year 1948.
Do.			1½ by 3-inch	151	D	5.3	38.9	50.7	10.4	6.9					12,000	12,820	12,810+	1	Cp				Fiscal year 1949.
Do.			do.	96	D	5.3	39.8	50.5	9.7	6.9					12,170	12,880	12,780	1	Cp				Nov. 4, 1947.
Somerset:			0 by 1½-inch	100	T	5.2	39.0	52.0	7.6	5.5	74.2	1.5	9.7	12,560	13,250	12,440	1	Cp					Fiscal year 1949.
Do.			Hvbb	100	T	5.2	39.0	52.2	8.8	5.5					12,340	13,010	12,520	1	Cp				Nov. 4, 1947.
Do.			Hvbb	75	T	5.1	38.2	51.6	10.2	5.5					12,410	13,290	12,570	1	Cp				Nov. 6, 1947.
Do.			0 by 2-inch	325	T	6.0	39.6	51.5	8.9	5.5					12,410	13,290	12,570	1	Cp				Do.
Do.			0 by 1½-inch	617	D	5.4	38.3	48.1	13.6	5.5					11,610	12,270	11,280	1	Cg (1), Cp (10)				Fiscal year 1948.
HUERFANO COUNTY																							
Walsenburg:																							
Loma Park			0 by 1½-inch	424	D	5.5	35.2	47.0	17.8	1.3					10,060	10,650	7,240	4	NAB	(4), NAB (3)			Fiscal year 1949.
Morning Glory			6-inch lump	30	T	5.6	41.3	50.0	8.7	6.9	72.5	1.2	12.1	12,000	12,710	12,500	1	NAB					Aug. 18, 1947.
Do.			1½ by 6-inch	60	T	5.0	39.3	50.2	10.4	5.9					11,770	12,400	12,470	1	NAB				Do.
Do.			do.	54	D	6.3	37.3	54.2	8.5	5.4					12,060	12,860	12,470	1	NAB				Fiscal year 1948.
Do.			do.	3,284	D	4.4	38.2	52.1	9.7	6.6					12,100	12,960	12,470	12	Cp (1), Af (2), Af (5), Neb (4)				Fiscal year 1950.
Do.			1½ by 3-inch	527	D	4.5	38.1	50.2	11.7	6.6					11,890	12,440	12,440	4	Af (1), Af (2), Af (3), NAB (1)				Fiscal year 1950.
Do.			do.	737	D	3.8	38.7	46.1	10.3	6.6					12,100	12,880	12,450	3	Af (2), NAB (1)				Fiscal year 1949.
Do.			0 by 1½-inch	60	T	5.9	39.1	46.2	14.7	6.6					11,130	11,830	12,450	1	NAB				Aug. 18, 1947.
Ravenwood			3 by 7-inch	7,430	D	3.6	38.4	51.0	10.0	6.6					12,480	12,990	12,870	1	Cp (7), Af (3)				Fiscal year 1949.
Do.			2 by 7-inch	367	D	3.1	38.0	51.7	9.3	6.6					12,720	13,120	12,870	1	Cp				Do.
Do.			do.	315	D	5.5	39.9	50.7	9.4	6.6					12,040	12,730	12,870	1	Af				Fiscal year 1950.

TABLE 3.—Analyses of tippie and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent										Ultimate, percent				Calorific value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ³	Agglomerating index ⁴	Free-swelling index	Hardgrove grindability index	Date
						Moisture		Volatiles		Fixed carbon		Ash		Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
COLORADO—Continued																												
ROUT COUNTY—continued																												
Route:																												
Keystone	Pinnacle	Hvbb	8-inch lump	90	T	6.9	40.7	52.9	6.4	0.6					12,320	13,230	1		Cp				Jan. 21, 1948.					
Do.	do.	Hvbb	3- by 8-inch	90	T	7.0	42.3	51.7	6.0	5					12,290	13,210	1		Cp				Do.					
Do.	do.	Hvbb	1½- by 3-inch	75	T	7.1	42.0	51.6	6.4	6					12,240	13,180	1		Cp				Do.					
Do.	do.	Hvbb	1¼- by 3-inch (W)	70	T	7.9	43.2	52.2	4.6	6	5.3	75.6	1.7	12.2	12,430	13,410	1		Cp				Do.					
Do.	do.	Hvbb	¾- by 1½-inch (W)	8	T	10.4	42.7	52.6	4.7	6					12,030	13,430	1		Cp				Do.					
Do.	do.	Hvbb	0 by 1¼-inch	150	T	9.0	41.7	50.2	8.1	6					11,710	12,870	1		Cp				Do.					
Do.	do.	Hvbb	do.	1,437	D	6.3	41.8	50.5	7.7	6					12,090	12,900	8		Cp (3), Aw (2)				Fiscal year 1950.					
WELD COUNTY																												
Dacono:																												
Boulder Valley																												
No. 3	Larsmie	Subb	4-inch lump	100	T	24.9	39.3	55.9	4.8	3	4.7	72.8	1.6	15.8	9,390	12,510	1	12,080	NAA				Jan. 6, 1948.					
Do.	do.	Subb	1½- by 2½-inch	30	T	24.7	39.3	55.4	5.3	4					9,400	12,480	1	12,210	NAA				Do.					
Do.	do.	Subb	¾- by 1½-inch	30	T	24.6	39.3	55.1	7.2	7					9,270	12,280	1	11,970	NAA				Do.					
Do.	do.	Hvbb	0 by 1½-inch	634	D	22.5	38.5	54.2	7.0	6					9,530	12,300	2	21,970	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	do.	5,116	D	22.0	38.7	54.6	6.7	5					9,500	12,300	15	2,000	NAA (14), NAB (1)				Fiscal year 1949.					
Do.	do.	Hvbb	do.	886	D	25.1	38.5	55.3	6.0	4					9,300	12,420	1	8,230	NAA				Fiscal year 1950.					
Do.	do.	Hvbb	0 by ¾-inch	75	T	24.7	39.3	55.2	6.7	8					9,060	12,040	1	11,970	NAA				Jan. 6, 1948.					
Do.	do.	Hvbb	do.	149	D	22.3	39.3	55.5	7.5	9					9,470	12,190	2	2,040	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	do.	3,944	D	23.0	39.4	54.2	6.4	5					9,490	12,330	3	12,2,030	NAA				Fiscal year 1950.					
Erie:																												
Eagle:																												
Do.	Hvbb	Hvbb	8-inch lump	150	T	22.6	39.3	55.5	4.7	4	4.9	74.0	1.6	14.4	9,860	12,730	1	12,080	NAA				Dec. 16, 1947.					
Do.	do.	Hvbb	2½- by 8-inch	70	T	22.1	40.0	54.7	5.3	3					9,830	12,650	1	12,050	NAA				Do.					
Do.	do.	Hvbb	1½- by 2½-inch	200	T	22.4	41.4	53.4	5.2	3					9,830	12,660	1	12,050	NAA				Do.					
Do.	do.	Hvbb	0 by 1½-inch	240	T	22.3	38.8	53.7	7.6	4					9,510	12,290	1	12,130	NAA				Do.					
Do.	do.	Hvbb	do.	4,350	D	20.0	38.8	54.4	7.5	5					9,810	12,260	11	13,2,050	NAA				Fiscal year 1949.					
Do.	do.	Hvbb	do.	1,576	D	21.8	38.8	54.2	7.0	4					9,640	12,330	3	12,2,040	NAA				Fiscal year 1950.					
Do.	do.	Hvbb	0 by ¾-inch	8,038	D	20.8	38.8	54.3	7.1	5					9,710	12,260	18	2,050	NAA				Do.					
Do.	do.	Hvbb	8-inch lump	80	T	23.3	39.3	54.8	6.0	4					9,660	12,580	1	12,140	NAA				Do.					
Do.	do.	Hvbb	2½- by 8-inch	100	T	23.0	40.0	53.8	6.0	3					9,670	12,550	1	12,140	NAA				Do.					
Do.	do.	Hvbb	1½- by 2½-inch	20	T	22.5	40.0	53.3	6.4	4					9,680	12,500	1	12,080	NAA				Do.					
Do.	do.	Hvbb	¾- by 1½-inch	100	T	22.8	40.0	54.8	5.2	4	4.9	73.5	1.6	14.4	9,770	12,660	1	12,000	NAA				Do.					
Do.	do.	Hvbb	0 by 1½-inch	43	D	20.9	41.1	52.4	5.8	3					9,880	12,500	1	12,000	NAA				Do.					
Do.	do.	Hvbb	do.	215	D	22.0	39.5	54.8	5.7	4					9,770	12,520	3	2,000	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	0 by ¾-inch	40	T	23.0	40.0	53.2	6.4	4					9,580	12,430	1	12,050	NAA				Fiscal year 1950.					
Do.	do.	Hvbb	do.	834	D	22.5	38.8	55.3	6.3	5					9,660	12,460	3	2,040	NAA				Dec. 17, 1947.					
Do.	do.	Hvbb	do.	2,801	D	21.1	39.0	54.8	6.2	5					9,820	12,450	13	2,010	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	do.	200	T	22.7	39.6	52.4	8.0	6	4.7	70.2	1.6	14.9	9,380	12,140	1	12,210	NAA				Jan. 7, 1948.					
Do.	do.	Hvbb	Modified run-of-mine (1½- by 2½-inch removed)	25	T	22.1	39.6	52.1	8.3	4					9,460	12,150	1	12,290	NAA				Do.					
Do.	do.	Hvbb	1½- by 2½-inch	204	D	21.1	38.6	53.0	8.4	6					9,540	12,090	2	2,220	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	0 by 1½-inch	175	D	18.5	39.1	52.9	8.0	4					9,800	12,140	4	2,180	NAA				Fiscal year 1949.					
Do.	do.	Hvbb	do.	811	D	18.5	40.2	53.5	6.3	4					9,980	12,250	14	7,200	NAA				Fiscal year 1948.					
Do.	do.	Hvbb	1½- by 2½-inch	220	D	15.5	39.5	54.9	5.6	3					10,660	12,620	15	1,500	NAA				Fiscal year 1950.					

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Do.	5, 106	D	20.739, 5.54, 1.6, 4	4	9, 800, 12, 360	31, 2, 050	1	N Aa (26), N Ab (5) N Aa (27), N Ab (1) N Aa N Aa	Fiscal year 1948.
Do.	5, 565	D	20.038, 7.54, 4.6, 9	.5	9, 900, 12, 380	28, 2, 070	10		Fiscal year 1949.
Do.	529	D	20.438, 7.55, 6.5, 7	.4	10, 050, 12, 620	4, 2, 020	2		Fiscal year 1950.
Frederick: Graden.	148	D	20.039, 3.55, 2.5, 5	.4	9, 950, 12, 440	3			Fiscal year 1948.
ILLINOIS									
CHRISTIAN COUNTY									
Pans: Pans No. 1.	55	D	12.142, 5.45, 5.12, 0	4.8	10, 850, 12, 350	1		Cp	Fiscal year 1948.
Do.	51	D	11.841, 5.46, 8.11, 7	4.6	11, 000, 12, 480	7	4	Cf	Do.
Do.	665	D	11.738, 2.42, 0.19, 8	4.4	9, 900, 11, 210	1, 2, 160		Cf (2), Cp (5)	Do.
Do.	100	T	12.738, 6.46, 8.14, 6	5.5	10, 440, 11, 950	1, 2, 000	1	Cf	Feb. 1, 1950.
Feabody No. 17.	120	T	13.138, 6.45, 8.15, 6	4.8	10, 320, 11, 870	1, 1, 940	1	Cf	Do.
Do.									64
CLINTON COUNTY									
Brees: North Brees.	623	D	12.538, 2.47, 1.14, 7	4.4	10, 440, 11, 980	22, 070	1	Cp	Fiscal year 1950.
Do.	434	D	11.139, 3.45, 5.15, 2	4.4	10, 450, 11, 750	3, 2, 020	2	Cf (1), Cp (2)	Do.
Do.	201	D	10.042, 4.45, 8.11, 8	3.9	11, 300, 12, 560	1, 2, 130	1	Cf	Do.
DOUGLAS COUNTY									
Murdock: Murdock.	30	T	13.444, 9.47, 5.7, 6	2.1	11, 670, 13, 470	1, 2, 350	1	Cf	Apr. 24, 1950.
Do.	60	T	13.443, 9.48, 1.8, 0	2.3	11, 600, 13, 380	1, 2, 050	1	Cf	Do.
Do.	60	T	13.917, 4.47, 3.11, 0	2.3	11, 110, 12, 890	1, 2, 080	1	Cf	Do.
Do.									5 1/2
FRANKLIN COUNTY									
Coello: Old Ben No. H.	59	D	7.938, 3.54, 0.7, 1	2	12, 030, 13, 050	1		Cf	Fiscal year 1948.
Herrin: Energy No. 5.	80	T	7.938, 2.54, 5.7, 3	1.0	12, 460, 13, 520	1, 2, 500	1	Cf	Dec. 6, 1949.
Do.	175	T	11.037, 1.54, 9.8, 0	1.1	11, 900, 13, 380	1, 2, 360	1	Cf	Do.
Do.	200	T	9.937, 4.55, 0.7, 6	.9	12, 060, 13, 390	1, 2, 440	1	Cf	Do.
Do.									
Do.	150	T	8.637, 6.55, 6.6, 8	9	9.0, 12, 360, 13, 520	1, 2, 310	1	Cf	Dec. 6, 1949.
Do.	125	T	8.934, 0.52, 8.13, 2	1.3	11, 320, 12, 430	1, 2, 230	1	Cp	Do.
Orient: Orient No. 1.	250	T	8.438, 6.54, 7.6, 7	8	9.0, 12, 140, 13, 550	1, 2, 420	1	Cf	Nov. 23, 1949.
Do.	500	T	8.738, 3.54, 4.7, 3	.9	12, 270, 13, 430	1, 2, 210	1	Cf	Do.
Do.	400	T	9.137, 4.55, 0.7, 6	.7	12, 160, 13, 380	1, 2, 420	1	Cf	Do.
Do.	200	T	9.337, 8.54, 8.7, 4	7	12, 200, 13, 440	1, 2, 310	1	Cf	Do.
Do.	380	T	9.837, 5.54, 5.7, 7	9	12, 260, 13, 260	1, 2, 260	1	Cf	Do.
Do.	440	T	10.437, 5.54, 1.7, 8	8	11, 950, 13, 340	1, 2, 210	1	Cf	Do.
Do.	220	T	9.037, 4.55, 2.7, 4	.7	12, 210, 13, 420	1, 2, 230	1	Cf	Do.
Do.	195	T	9.034, 8.49, 9.15, 3	.9	10, 990, 12, 070	1, 2, 260	1	Cf	Do.
Do.	799	D	7.637, 8.54, 1.8, 1	1.1	12, 280, 13, 290	8, 2, 360	8	Cf (3), Cp (5)	Fiscal year 1948.
Royalton: Lida B No. 15.	35	T	8.934, 2.45, 4.20, 4	4.0	7.4, 10, 390, 11, 410	1, 2, 030	1	Cf	Apr. 15, 1950.
Do.	275	T	8.935, 3.55, 6.9, 1	1.0	8.6, 11, 020, 13, 170	1, 2, 590	1	Cp	Nov. 26, 1949.
Do.	500	T	9.835, 9.54, 2.9, 9	1.0	12, 700, 12, 950	1, 2, 430	1	Cf	Do.
Do.	500	T	12.536, 1.54, 2.9, 7	.9	11, 420, 13, 050	1, 2, 380	1	Cf	Do.
Do.	280	T	9.334, 6.56, 2.9, 2	1.0	11, 890, 13, 110	1, 2, 280	1	Cf	Do.
Do.	250	T	10.732, 3.51, 6.16, 1	1.1	10, 670, 11, 950	1, 2, 280	1	Cp	Do.

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Flatt.	Red Ember	No. 5	4- by 8-inch (W)	T	15.541.548.110.4	3.4	10,800	12,790	1,2,000	1	Cf	Apr. 12, 1950.
	Do	do	1 1/4- by 4-inch (W)	850	16.240.549.210.3	3.2	10,720	12,790	1,2,080	1	Cf	Do.
	Do	do	0 by 1 1/4-inch (W)	600	15.540.848.410.8	3.1	10,760	12,730	1,2,000	1	Cf	5 1/2 62
	Flamingo	do	Modified run-of-mine (2- by 4-inch removed)	1,100	16.242.047.610.4	2.9	10,780	12,850	1,2,050	1	Cf	Apr. 14, 1950.
	Do	do	2- by 4-inch	350	15.842.746.311.0	3.0	10,750	12,770	1,2,030	1	Cf	Do.
HENRY COUNTY												
	Atkinson	No. 6	Modified 2- by 7-inch (W) (part of 2- by 4-inch removed)	550	19.545.047.5	7.5	10,540	13,100	1,2,080	1	Cf	Apr. 17, 1950.
	Do	do	2- by 4-inch (W)	100	19.344.448.4	7.2	10,600	13,140	1,2,080	1	Cf	Do.
	Do	do	1 1/4- by 2-inch (W)	200	20.544.647.9	7.5	10,430	13,110	1,2,080	1	Cf	Do.
	Do	do	1/2-mm. by 1 1/4-inch (W)	500	24.343.648.7	7.7	9,910	13,090	1,2,080	1	Cf	5 1/2 65
	Do	do	0 by 1 1/4-inch (W)	1,443	18.642.446.6	11.0	10,210	12,540	4,2,070	3	Cf (1), Cp (3)	Fiscal year 1949.
	Do	do	do	5,198	16.644.347.4	8.3	10,800	12,950	9,2,080	5	Cf (7), Cp (2)	Fiscal year 1950.
JACKSON COUNTY												
	De Soto: Admiral	do	Run-of-mine	1,637	8.341.149.8	9.1	11,970	13,050	4	---	Cf	Do.
	No. 2	do	4- by 8-inch (W)	340	8.038.349.6	12.1	11,620	12,630	11,970	1	Cf	Jan. 18, 1950.
	Do	do	2- by 4-inch (W)	450	8.339.250.0	10.8	11,800	12,930	1,2,030	1	Cf	Do.
	Do	do	1 1/4- by 2-inch (W)	350	8.939.510.6	9.7	11,940	13,100	1,2,080	1	Cf	Fiscal year 1950.
	Do	do	do	150	6.640.249.7	10.1	12,090	12,940	3	---	Cf	Jan. 18, 1950.
	Do	do	3/4- by 1 1/4-inch (W)	320	9.339.150.6	10.3	11,790	13,000	1,2,080	1	Cf	Do.
	Do	do	1/2- by 3/4-inch (W)	300	12.638.151.0	10.9	11,420	13,050	1,2,050	1	Cf	Fiscal year 1950.
	Do	do	0 by 1 1/4-inch (W)	14,598	17.638.250.0	10.8	11,900	12,880	30,2,090	6	Cf	Jan. 18, 1950.
	Do	do	0 by 3/4-inch (W)	295	14.138.450.7	10.9	11,030	12,830	1,2,080	1	Cf	6 65
	Do	do	1 1/2-inch lump	80	7.239.248.5	11.3	11,830	12,740	1,2,150	1	Cf	Apr. 14, 1950.
	Hallidayboro	No. 6	3/8- by 1 1/2-inch	65	8.136.749.5	13.8	11,370	12,380	1,2,310	1	Cf	Do.
	No. 1	do	do	55	8.095.850.3	13.2	11,300	12,290	1,2,280	1	Cp	Fiscal year 1950.
	Do	do	0 by 3/8-inch	20	8.733.044.4	12.6	9,920	10,870	1,2,280	1	Cp	Apr. 14, 1950.
JEFFERSON COUNTY												
	Nason: Jefferson No. 2	do	0 by 1 1/2-inch	671	10.136.450.3	13.3	11,390	12,670	2,390	1	Cf	Fiscal year 1950.
LA SALLE COUNTY												
	Ottawa:	No. 2	3- by 6-inch	110	9.442.944.0	13.1	11,140	12,300	2	---	Cf (1), Cp (1)	Fiscal year 1948.
	Do	do	1 1/4- by 3-inch	50	10.043.144.5	10.4	11,450	12,720	2	---	Cf	Do.
	Do	do	do	106	10.243.144.4	12.5	11,000	12,320	2	---	Cf (1), Cp (1)	Fiscal year 1949.
LOGAN COUNTY												
	Lincoli:	No. 5	2- by 6-inch	61	12.743.843.0	13.2	10,680	12,230	1	---	Cf	Fiscal year 1950.
	Do	do	2- by 4-inch	101	12.642.745.2	12.1	10,800	12,430	2	---	Cf (1), Cp (1)	Fiscal year 1948.
	Do	do	1 1/4- by 4-inch	50	8.841.546.0	12.5	11,220	12,310	1	---	Cp	Do.
	Do	do	do	165	9.841.045.5	13.5	10,880	12,070	2	---	Cp	Fiscal year 1949.
MACOURN COUNTY												
	Mount Olive:	No. 6	6-inch lump	80	12.944.546.1	9.4	9.6	11,110	12,760	1	Cf	Jan. 26, 1950.
	No. 15	do	3- by 6-inch	200	13.342.646.9	10.5	10,900	12,560	1	---	Cf	Do.
	Do	do	1 1/4- by 6-inch	393	11.542.844.6	12.6	10,850	12,260	3	---	Cf (2), Cp (1)	Fiscal year 1948.
	Do	do	do	3,408	11.842.944.9	12.2	10,810	12,260	7	---	Cf (6), Cp (1)	Fiscal year 1950.
	Do	do	1 1/4- by 3-inch	400	12.941.645.0	13.4	10,580	12,140	1	---	Cf	Jan. 26, 1950.
	Do	do	1- by 6-inch	100	12.941.645.0	11.9	10,750	12,330	1	---	Cf	Fiscal year 1949.
	Do	do	0 by 1 1/4-inch (W)	250	16.641.947.3	10.8	10,470	12,560	1	---	Cf	Jan. 26, 1950.
	Do	do	0 by 1 1/4-inch	778	11.340.344.0	15.7	10,360	11,680	2,0,030	2	Cp	Fiscal year 1949.

1 Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

County	Locality	Sample	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis	Notes							
MARION COUNTY	Glenridge:	Hvbb	50	9.9	41.0	47.1	11.9	3.8	4.9	89.8	1.3	8.3	11,450	12,710	Cf	Jan. 17, 1950.
		Hvbb	90	9.5	40.6	46.4	13.0	4.2					11,340	12,520	Cf	Do.
		Do.	85	11.0	39.7	46.3	14.0	3.6					11,020	12,380	Cf	Do.
		Do.	210	10.4	38.5	45.6	15.9	3.9					10,830	12,090	Cf	Do.
MONTGOMERY COUNTY	Nokomis:	Hvcb	100	11.1	43.7	44.2	12.1	5.7	4.8	68.0	1.2	8.2	11,030	12,410	Cf	Feb. 21, 1949.
		Hvcb	125	11.1	41.5	44.6	13.9	5.8					11,970	12,110	Cf	Do.
		Hvcb	250	11.0	41.1	43.4	15.5	5.9					10,550	11,860	Cf	Do.
		Hvcb	500	11.5	40.3	44.9	14.8	5.2					10,540	11,910	Cf	Do.
FERRY COUNTY	Du Quoin:	Hvcb	253	10.0	40.9	48.3	10.8	3.3					11,370	12,640	Cf	Apr. 24, 1950.
		Hvcb	454	10.7	40.3	50.6	9.1	2.4					11,550	12,920	Cf	Do.
		Hvcb	150	8.6	40.8	50.0	9.2	3.1					11,710	12,810	Cf	Fiscal Year 1950.
		Hvcb	1,083	10.1	40.8	49.3	9.9	2.7					11,490	12,780	Cf	Apr. 24, 1950.
		Hvcb	800	10.8	40.4	49.1	10.5	2.7					11,360	12,720	Cf	Do.
		Hvcb	8.7	4.0	2.50	8.9	2.6						11,770	12,890	Cf	Fiscal Year 1950.
		Hvcb	1,005	11.5	39.7	50.1	10.2	2.6					11,280	12,750	Cf	Apr. 24, 1950.
		Hvcb	27	8.9	39.8	49.6	10.6	3.3					11,530	12,650	Cf	Fiscal Year 1950.
		Hvcb	56	11.2	40.5	48.8	10.7	2.8					11,290	12,720	Cf	Do.
		Hvcb	658	13.0	40.3	50.5	9.2	2.5					11,230	12,910	Cf	Apr. 24, 1950.
		Hvcb	232	7.0	40.1	49.4	10.5	2.5					11,780	12,660	At	Fiscal Year 1949.
		RANDOLPH COUNTY	Coutlerville:	Hvcb	450	11.4	39.2	49.3	11.5	3.8					11,140	12,570
Hvcb	2,314			8.2	40.5	48.8	10.7	3.8					11,530	12,860	Cf	Fiscal Year 1949.
Hvcb	350			11.5	40.9	49.1	10.0	3.3					11,380	12,860	Cf	Jan. 23, 1950.
Hvcb	100			12.4	39.8	49.0	10.0	3.5	5.0	71.1	1.4	9.0	11,250	12,840	Cf	Do.
Hvcb	500			15.9	38.9	51.0	10.1	2.9					10,770	12,800	Cf	Do.
Hvcb	80			11.1	39.5	49.5	11.0	3.5	4.9	69.3	1.3	10.0	11,180	12,880	Cf	Jan. 11, 1950.
Hvcb	150			11.3	38.5	49.6	11.0	3.0					10,590	11,880	Cf	Do.
Hvcb	60			13.7	38.2	49.2	11.4	3.0					10,840	11,820	Cf	Do.
Hvcb	536			7.7	38.7	49.2	13.6	3.3					11,410	12,100	Cf	Fiscal Year 1949.
Hvcb	200			17.8	38.7	49.0	13.6	3.1					10,180	12,390	Cp	Jan. 11, 1950.
ST. CLAIR COUNTY	Belleville:	Hvcb	440	8.7	41.8	46.5	11.7	4.0					11,330	12,410	Cf	Fiscal Year 1949.
		Hvcb	397	7.6	40.0	49.2	10.8	3.4					11,500	12,540	Cf	Do.
		Hvcb	4,414	10.9	41.5	47.4	11.1	3.5					11,210	12,630	Cf	Fiscal Year 1948.
		Hvcb	21,285	10.0	41.3	48.0	10.7	3.4					11,360	12,820	Cf	Fiscal Year 1949.
		Hvcb	769	11.8	41.9	46.9	11.2	3.7					11,100	12,380	Cf	Fiscal Year 1948.
		Hvcb	33	7.4	38.6	46.9	14.5	5.3					11,080	11,960	Cp	Do.
		Hvcb	120	9.8	42.0	45.1	12.9	4.8					11,140	12,850	Cf	Feb. 10, 1950.
		Hvcb	80	12.0	43.2	46.6	10.2	3.8	5.0	71.5	1.2	8.3	11,390	12,940	Cf	Do.
		Hvcb	35	11.1	44.1	45.3	10.6	3.7					11,350	12,770	Cf	Do.
		Hvcb	235	11.8	44.1	45.5	10.4	3.7					11,270	12,770	Cf	Do.
Belleville:	Hvcb	428	8.9	35.7	47.2	17.1	3.6					10,910	11,980	Cf	Fiscal Year 1950.	
	Hvcb	716	10.9	40.2	44.6	15.2	5.3					10,680	11,980	Cf	Do.	
	Hvcb	419	15.1	36.4	42.0	21.6	4.5					9,320	10,980	Cf	Do.	
	Hvcb															

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample No.	Symbol	Preparation	Weight (lb)	Moisture (%)	Vol. (cu ft)	Calorific Value (Btu)	Analysis Date	Notes	
SALINE COUNTY	Elizavado: Dersco No. 2	do	do	do	11,585	13,444.544	7,110.8	3.8	11,000	
		do	do	do	220	19,542.546	8,107.7	3.7	10,250	
		do	do	do	100	11,543.044	8,122.2	4.8	11,970	
		do	do	do	100	9,542.345	5,122.2	4.5	12,080	
		do	do	do	350	12,443.944	4,117.7	4.3	11,900	
		do	do	do	3,127	8,546.144	2,107.4	4.2	11,520	
		do	do	do	5,383	8,844.944	2,109.4	4.3	11,550	
		do	do	do	12,414	11,444.544	6,109.4	4.3	16,200	
		do	do	do	750	15,943.445	2,111.4	4.0	10,500	
		do	do	do	3,200	11,345.543	9,103.6	4.1	11,200	
		do	do	do	7,400	10,444.744	5,103.8	4.0	11,370	
		do	do	do	15,847	12,744.544	14,610.9	4.0	11,080	
		do	do	do	do	do	do	do	do	do
		do	do	do	do	do	do	do	do	do
		SANGAMON COUNTY	Springfield: Panther Creek No. 5	Hvbb	6-inch lump	85	6,237.553	4,911	2.9	12,480
Hvbb	3- by 6-inch			138	6,437.454	4,822	2.3	12,610		
Hvbb	1 1/2- by 3/4-inch			190	5,736.751	4,829	2.6	12,520		
Hvbb	10-mesh by 3/4-inch			293	6,137.053	3,977	2.7	12,350		
Hvbb	0 by 1 1/2-inch			223	7,234.950	3,148	2.4	11,550		
Hvbb	0 by 10-mesh			30	6,735.450	7,133.0	2.8	11,700		
Hvbb	0 by 10-mesh			30	8,333.150	8,161.1	2.7	11,080		
Hvbb	6-inch lump			85	5,937.653	4,903	3.0	12,500		
Hvbb	3- by 6-inch			138	6,337.254	3,852	2.4	12,600		
Hvbb	1 1/2- by 3/4-inch			562	5,634.650	1,153	3.7	11,960		
Hvbb	1- by 1 1/2-inch			715	6,837.454	2,842	2.3	12,540		
Hvbb	1- by 1 1/2-inch			255	6,938.053	6,842	2.3	12,500		
Hvbb	3/4- by 1-inch			220	7,737.153	9,020	2.3	12,390		
Hvbb	5/16- by 3/4-inch			515	9,335.553	6,929	2.2	12,050		
Hvbb	28-mesh by 5/16-inch			610	7,535.953	6,105	2.1	12,120		
WILL COUNTY	Braidwood	do	do	617	7,233.050	1,169	2.7	11,200		
		do	do	110	5,638.454	2,741	1.8	12,900		
		do	do	110	5,735.354	3,741	2.0	12,900		
		do	do	156	5,538.154	6,731	1.6	12,800		
		do	do	100	5,438.054	3,772	2.2	12,880		
		do	do	245	5,935.553	6,106	2.1	12,280		
		do	do	20	5,336.754	6,877	2.3	12,640		
		do	do	85	5,336.654	5,829	2.5	12,700		
		do	do	130	6,536.653	6,928	2.5	12,500		
		do	do	150	5,636.652	5,109	2.9	12,390		
		do	do	12	5,437.050	2,127	2.9	12,040		
		do	do	53	5,535.952	2,127	2.9	12,040		
		do	do	480	7,135.053	2,109	1.9	12,070		
		do	do	100	8,334.351	4,143	3.4	11,340		

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.
 3 Numbers in parentheses indicate the number of determinations made.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent										Ultimate, percent						Number of analyses ²	Ash-softening temperature, F.	Number of ash-softening temperatures ²	Agglomerating index ³	Free-swelling index	Hardgrove grindability index	Date		
						as received coal			Volatile matter			Fixed carbon				Ash			Sulfur										Hydrogen	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
ILLINOIS—Continued																														
WILLIAMSON COUNTY																														
Cartersville, Forsyth-	No. 5		28-mesh by 1½-inch (W)	15 D	D	6.135	7.64	6.9	7.1	1.9						12,150	12,940	1		Cp			Fiscal year 1950.							
Williamson.																														
Harrisburg.																														
Black No. 2	No. 6	Hvbb	Run-of-mine	150 T	T	6.936	5.48	8.14	7.4	4.2	4.6	6.8	1.1	1.5	6.9	11,410	12,960	1	1	Cf	5	58	Nov. 28, 1949.							
Blue Bird No. 8	No. 5		¾-by 6-inch (W)	100 T	T	7.37	5.63	5.0	2.5	5.0	7.4	1.1	1.8	7.6	12,320	13,510	1	1	Cf				Nov. 26, 1949.							
Do.	do.		2-mm by ¾-inch (W and OT)	50 T	T	11.536	7.63	6.9	2.2	2.2					11,670	13,230	1	1	Cf			61	Do.							
Blue Bird Nos. 7 and 8.	do.		10-mesh by 1½-inch (W)	765 D	D	6.937	6.62	3.10	1.2	2.6					12,150	13,010	9	2,040	3	Cf			Fiscal year 1950.							
Do.	do.		10-mesh by 1½-inch (W)	488 D	D	7.337	2.63	5.9	3.2	2.2					12,290	13,260	4	2,070	2	Cf			Do.							
Herrin.																														
Freeburn No. 3	No. 6		¾-by 3-inch (W)	450 T	T	9.026	3.54	5.9	2.2	1.2					12,000	13,200	1	2,380	1	Cf			Dec. 7, 1949.							
Do.	do.		1½-by 3-inch (W)	275 T	T	9.026	3.54	4.8	3.3	1.1					12,040	13,320	1	2,320	1	Cf			Do.							
Do.	do.		¾-by 1½-inch (AC)	270 T	T	8.336	3.55	4.7	8.3	1.3	4.8	7.6	2.1	1.6	8.3	12,530	13,430	1	2,350	1	Cf		Do.							
Do.	do.		¾-by ¾-inch (AC)	280 T	T	8.336	3.55	4.8	8.0	1.1					12,160	13,230	1	2,340	1	Cf			Do.							
Do.	do.		10-mesh by ¾-inch (AC)	280 T	T	8.336	3.55	4.8	8.0	1.2					12,190	13,370	1	2,260	1	Cf			Do.							
Do.	do.		0-by 10-mesh (AC)	400 T	T	11.732	6.63	2.14	2.3	1.3					10,960	12,420	1	2,260	1	Cf			Do.							
New Morgan.	do.		1½-by 6-inch (W)	525 T	T	8.37	9.63	8.3	2.3						12,220	13,350	1	2,130	1	Cf			Dec. 14, 1949.							
Do.	do.		¾-by ¾-inch (W)	100 T	T	14.837	6.94	3.8	1.2	2.2					11,440	13,390	1	2,100	1	Cf			Do.							
Do.	do.		28-mesh by 1½-inch (W)	280 T	T	13.337	2.65	4.7	4.2	2.3	4.9	7.5	2.1	1.6	8.6	11,680	13,470	1	2,130	1	Cf			Do.						
Do.	do.		do.	355 D	D	5.938	8.60	8.10	4.3	3.2					12,330	13,010	1	2,210	1	Cf			Fiscal year 1949.							
Do.	do.		do.	2,760 D	D	6.938	4.62	1.9	5.2	2.7					12,240	13,150	5	2,260	1	Cf			Fiscal year 1950.							
Johnston City.																														
Lake Creek.																														
Do.	do.		6-inch lump	110 T	T	7.355	4.62	5.12	1.5						11,920	12,780	1	2,470	1	Cf			Dec. 5, 1949.							
Do.	do.		¾-by 6-inch	110 T	T	7.336	4.64	1.9	1.5						12,240	13,210	1	2,370	1	Cf			Do.							
Do.	do.		1½-by 3-inch (OT)	110 T	T	7.336	4.64	1.9	1.6						12,050	12,960	1	2,390	1	Cf			Do.							
Do.	do.		¾-by 1½-inch	250 T	T	6.936	0.62	3.11	7.2	2.1					11,920	12,810	1	2,150	1	Cf			Do.							
Do.	do.		¾-by ¾-inch (W and OT)	300 T	T	12.037	1.64	5.8	4.1	1.7	5.0	7.5	2.1	1.7	8.0	11,820	13,430	1	2,200	1	Cf			Do.						
Do.	do.		10-mesh by ¾-inch (OT)	168 D	D	8.636	3.62	4.11	3.1	1.6					11,740	12,940	1	2,440	1	Cf			Fiscal year 1949.							
Do.	do.		0-by 1½-inch	2,247 D	D	7.435	3.62	2.12	5.1	1.9					11,700	12,630	7	2,280	5	Cf (3), Cp (4)			Fiscal year 1950.							
Do.	do.		0-by ¾-inch	350 T	T	8.635	3.63	2.11	5.1	1.9					11,730	12,830	1	2,180	1	Cf			Dec. 5, 1949.							
Marion.																														
Cedar Hill.	No. 5		¾-by 1½-inch	9,325 D	D	5.436	3.61	4.12	3.3	3.0					12,130	12,620	2	2,050	2	Cf			Fiscal year 1949.							
Do.	do.		0-by 1½-inch	14,087 D	D	6.035	9.60	6.13	5.3	3.0					11,810	12,560	13	2,050	13	Cf (12), Cp (1)			Fiscal year 1948.							
Do.	do.		do.	700 D	D	7.936	1.46	5.15	4.3	3.1					11,120	12,960	1	2,100	1	Cp			Fiscal year 1948.							
Do.	No. 6		¾-by 7-inch (W)	150 T	T	6.238	2.60	8.11	0.2	3.2					12,160	12,860	1	2,100	1	Cf			Fiscal year 1949.							
Do.	do.		2-by 3-inch (W)	150 T	T	6.139	3.60	9.8	3.0	3.0					12,320	13,120	1	2,100	1	Cf			Do.							
Do.	do.		1-by 2-inch (W)	100 T	T	6.839	0.61	4.9	6.6	3.0					12,280	13,180	1	2,210	1	Cf			Do.							
Do.	do.		do.	278 D	D	5.939	2.61	1.9	7.7	3.0					12,360	13,140	4	2,260	4	Cf			Fiscal year 1948.							
Do.	do.		28-mesh by ¾-inch (W and OT)	100 D	D	8.237	9.61	7.10	4.1	1.5					11,950	13,010	1	2,150	1	Cf			Do.							
Do.	do.		10-mesh by 1-inch (W)	500 T	T	6.339	7.60	9.9	4.2	2.8					12,410	13,250	1	2,150	1	Cf			Dec. 12, 1949.							
Do.	do.		0-by 1½-inch	82 D	D	7.738	2.60	2.11	6.3	3.0					11,940	12,930	1	1,960	1	Cf			Fiscal year 1948.							
Do.	do.		0-by 10-mesh (W)	100 T	T	13.638	2.62	5.9	3.2	2.6	5.0	7.3	6.1	1.5	8.0	11,450	13,240	1	1,960	1	Cf			Dec. 12, 1949.						

Pittsburgh: Crystal Block Stonefort Carmac Do.	Run-of-mine.	Hvbb	185	T	7.336.849.4	13.8	2.5	4.8	69.4	1.6	7.9	11,580	12,490	12,080	1	Cf	5	60	Apr. 11, 1950.
No. 5	3- by 6-inch (W)		75	T	7.436.953.4	9.7	2.2	4.9	74.3	1.7	7.8	12,270	13,210	12,500	1	Cf			Dec. 13, 1949.
Do.	1- by 3-inch (W)		100	T	8.436.654.5	8.9	2.4	4.9	74.3	1.7	7.8	12,270	13,350	12,000	1	Cf			Do.
Do.	10-mesh by 1-inch (W)		200	T	13.936.054.8	9.2	2.1					11,440	13,290	12,000	1	Cf		59	Do.
INDIANA																			
CLAY COUNTY																			
Coalmont:																			
Alum. Cove	4-inch lump.	Hvcb	166	T	11.644.546.4	9.1	3.8	5.3	72.2	1.3	8.3	11,660	13,200	12,180	1	Cf			Mar. 13, 1950.
Do.	1 1/2- by 4-inch	Hvcb	690	T	12.543.946.2	9.9	3.6					11,440	13,080	12,150	1	Cf			Do.
Do.	0 by 1 1/4-inch		360	T	15.140.546.4	13.1	4.0					10,620	12,510	12,070	5 1/2	Cf		60	Do.
Stanton:																			
Chickok	1- by 4-inch (W)		810	T	12.844.644.8	10.6	4.4					11,280	12,930	11,970	1	Cf			Jan. 23, 1950.
Do.	1/4- by 1-inch (W)		410	T	11.046.144.4	9.5	4.2	5.2	71.8	1.4	7.9	11,670	13,110	11,970	1	Cf			Do.
Do.	0 by 1/4-inch (W)		114	T	15.244.245.3	10.5	3.8					10,940	12,910	12,030	1	Cf		4	Do.
GREENE COUNTY																			
Linton:																			
Comet.	4-inch lump	Hvcb	67	T	13.441.250.7	8.1	1.0					11,650	13,450	12,750	1	Cf			Mar. 11, 1950.
Do.	2- by 4-inch	Hvcb	31	T	13.641.151.0	7.9	1.1	5.2	74.9	1.8	9.1	11,630	13,460	12,700	1	Cf			Do.
Do.	1 1/2- by 2-inch	Hvcb	28	T	13.541.150.9	8.0	1.2					11,610	13,420	12,650	1	Cf			Do.
Do.	3/4- by 1 1/2-inch	Hvcb	28	T	14.340.550.2	9.3	1.4					11,320	13,210	12,520	1	Cf			Do.
Do.	0 by 3/4-inch		10	T	19.333.750.9	15.4	2.4					9,880	12,240	12,050	1	Cf		70	Do.
Fried. Truck	0 by 1/4-inch		1,873	T	11.640.440.0	13.9	2.4					10,580	11,970	12,050	1	Cp			Fiscal year 1950.
Lyons: Gillespie.	0 by 3/4-inch		1,501	D	11.836.443.8	19.8	3.0					9,960	11,290	12,000	1	Cp			Do.
Midland: Little Giant.	0 by 1/4-inch		1,975	D	12.933.646.6	19.8	1.4					9,960	11,440	12,000	2	Cp			Fiscal year 1949.
KNOX COUNTY																			
Bicknell:																			
Shasta	4- by 7-inch (W)		70	T	11.741.546.7	11.8	3.1					11,320	12,810	12,100	1	Cf			Mar. 22, 1950.
Do.	do		49	D	10.242.847.5	9.7	2.8					11,700	13,030	12,080	1	Cf			Fiscal year 1948.
Do.	3- by 4-inch (W)		200	T	12.041.947.3	10.8	2.6					11,420	12,980	12,210	1	Cf			Mar. 22, 1950.
Do.	1 1/4- by 3-inch (W)		550	T	13.541.548.0	10.5	2.5					11,240	12,990	12,180	1	Cf			Do.
Do.	do		1,633	T	7.840.448.9	10.7	2.6					11,870	12,870	12,180	1	Cf			Fiscal year 1950.
Do.	28-mesh by 1 1/4-inch (W)		1,063	D	7.240.648.3	11.1	2.6					11,880	12,800	4,200	4	Cf			Do.
Do.	0 by 1/4-inch		700	T	11.841.248.1	10.7	2.4					11,460	12,990	12,210	1	Cf		59	Mar. 22, 1950.
Do.	4- by 7-inch (W)		106	T	9.643.647.4	9.0	3.3					11,980	13,240	12,080	1	Cf			Mar. 21, 1950.
Do.	2- by 4-inch (W)		217	T	9.843.147.6	8.3	3.3					12,030	13,330	12,080	1	Cf			Do.
Do.	3/4- by 2-inch (W)		271	T	10.143.647.9	8.5	3.3					11,980	13,330	12,000	1	Cf			Do.
Do.	3/4- by 1 1/2-inch (W)		52	T	8.443.947.3	8.4	3.7					12,230	13,850	11,970	1	Cf			Do.
Do.	3/8- by 1 1/4-inch (W)		292	T	9.343.447.7	8.9	3.7					12,010	13,240	12,050	1	Cf		5	Do.
Do.	3/8- by 3/4-inch (W)		135	T	9.543.047.7	9.3	3.6					11,960	13,210	12,050	1	Cf			Do.
Do.	28-mesh by 1 1/4-inch (W)		440	T	8.742.547.7	9.8	3.7					11,960	13,060	11,970	1	Cf		63	Do.
PIKE COUNTY																			
Oakland City:																			
Ayrshire	3/8- by 1-inch (W)		566	D	7.843.646.5	9.9	4.4					11,890	12,890	12,070	1	Cf			Fiscal year 1949.
Do.	3- by 4-inch (W)		118	D	7.843.646.5	9.9	4.4					11,890	12,890	12,070	1	Cf			Fiscal year 1950.
Do.	1 1/2- by 4-inch (W)		118	D	8.543.047.7	9.3	3.7					11,900	13,060	3	Cf			Do.	
Do.	10-mesh by 1 1/2-inch		2,265	D	10.342.046.2	11.8	4.0					11,240	12,870	5	Cf			Do.	
Do.	10-mesh by 1 1/4-inch		203	D	8.342.546.4	10.7	4.9					11,610	12,820	12,030	1	Cf			Do.
Do.	10-mesh by 3/4-inch		195	D	8.341.348.0	10.7	4.2					11,310	12,760	2,030	2	Cf			Fiscal year 1949.
Do.	do		138	D	8.340.647.0	12.4	4.8					11,310	12,330	2,030	3	Cf			Fiscal year 1950.
Do.	28-mesh by 1 1/4-inch (W)		1,009	D	12.342.748.0	9.3	4.5					11,470	13,060	4,200	2	Cf (2)			Do.
Do.	6-inch lump		165	T	14.440.052.9	7.1	2.0					11,480	13,420	12,420	1	Cf			Apr. 3, 1950.
Do.	1 1/4- by 6-inch		355	T	13.040.053.4	6.6	2.1	5.1	74.8	1.7	9.7	11,460	13,470	12,230	1	Cf			Do.
Do.	3/8- by 1 1/4-inch		70	T	16.938.152.8	8.1	2.3					10,960	13,190	12,210	1	Cf			Do.
Do.	3/8- by 3/8-inch		80	T	18.138.851.1	10.1	2.5					10,590	12,830	12,440	1	Cf		4 1/2	Do.

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample Description	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis	Notes	Fiscal Year
Terre Haute:	Black Hawk	V	3.57	9.938	43.216	9.0	10,680	Cf	1949
	Do	V	4.5	10.741	44.814	5.0	10,960	Cf	1948
	Do	V	5.970	14.038	44.217	4.5	9,970	Cf	1950
Frazier	Green Valley	III	64	7.345	9.461	10.0	12,160	Cf (6), Cp (7)	1960
	Do	III	218	9.844	34.674	9.0	11,990	Cf	Do
	Do	III	160	10.344	47.480	3.6	12,050	Cf	Do
	Do	III	154	10.344	47.480	3.6	12,130	Cf	Do
	Do	III	179	12.944	48.466	8.6	12,150	Cf	Do
	Do	III	175	12.244	47.147	8.8	11,710	Cf	Do
	Do	III	77	10.644	54.474	8.1	11,990	Cf	Do
	Do	III	3,011	9.943	46.910	3.6	11,770	Cf	1950
	Do	III	77	10.541	48.450	13.2	11,930	Cf	Mar. 14, 1950
Saxton	Do	IV	127	13.638	35.531	8.6	11,500	Cf	Jan. 31, 1950
	Do	IV	228	13.938	45.288	8.8	12,840	Cf	Do
	Do	IV	181	14.539	45.288	8.0	12,780	Cf	Do
	Do	IV	128	12.339	45.288	8.8	11,440	Cf	Do
	Do	IV	1,417	11.339	45.191	9.0	11,620	Cf (1), Cp (1)	1948
	Do	IV	769	11.240	45.191	8.2	11,740	Cf (1), Cp (1)	1950
	Do	IV	146	15.039	45.383	7.6	11,880	Cf	Do
	Do	IV	216	15.739	45.383	7.1	11,430	Cf	1949
	Do	IV	127	13.241	45.288	6.8	11,790	Cf	1950
	Do	IV	351	10.245	46.880	4.1	12,360	Cf	1950
Talleydale	Do	III	92	10.245	46.880	4.1	12,000	Cf	1950
	Do	III	5,093	9.044	47.582	3.1	12,040	Cf	Do
	Do	III	7,828	9.244	47.582	3.9	11,950	Cf	Do
	Do	III	201	10.044	46.390	3.9	12,130	Cf	Do
	Do	III	500	7.444	46.191	3.7	12,200	Cf	Do
	Do	III	121	8.143	45.383	3.8	12,500	Cf	Do
	Do	III	1,180	7.443	44.812	5.3	11,690	Cf	1949
	Do	III	220	10.844	45.695	4.0	11,740	Cf	1950
	Do	III	170	11.743	44.686	3.8	11,760	Cf	1948
	Do	III	298	13.444	46.096	4.0	11,390	Cf	Do
	Do	III	46	8.039	48.912	4.0	11,810	Cf	1949
	Do	III	232	8.944	46.010	3.8	11,870	Cf	1950
	Do	III	652	11.341	46.412	4.8	11,190	Cf (3), Cp (1)	1949
	Do	III	130	14.341	45.912	6.4	10,800	Cf	Jan. 25, 1950
	Do	III	130	10.238	44.516	7.5	12,030	Cf	Do
	Do	III	230	10.544	45.807	4.3	11,780	Cf	Jan. 16, 1950
Victory	Do	III	305	11.445	43.384	4.3	11,680	Cf	Do
	Do	III	92	11.641	48.110	3.9	11,350	Cf	1950
	Do	III	350	12.543	46.410	4.2	11,300	Cf	Jan. 16, 1950
	Do	III	440	8.643	43.512	7.4	11,610	Cf	Jan. 30, 1950
Viking	Do	III	54	9.844	44.810	3.9	12,000	Cf	Do
Wabash	Do	V	186	9.944	45.410	3.8	11,740	Cf	Mar. 14, 1950
	Do	V	137	10.644	45.210	3.7	11,700	Cf	Do
	Do	V	80	11.044	45.410	3.8	11,500	Cf	Do
	Do	V	185	12.944	44.911	3.7	11,480	Cf	Do
	Do	V	97	11.943	44.810	3.4	11,280	Cf	Do
	Do	V	58	14.541	48.413	4.0	10,570	Cf	Do
WARREN COUNTY									
Chandler:	Three-Coal	V	20	8.844	45.010	5.2	11,680	Cf	Mar. 30, 1950
	Do	V	23	9.043	46.110	4.3	11,730	Cf	Do
	Do	V	19	8.543	46.010	4.6	12,000	Cf	Do
	Do	V	100	9.643	44.412	5.4	11,250	Cf	4 1/2
Lynnville:	Wasson	V	549	11.140	47.512	3.4	11,170	Cf	Do
	Do	V	194	11.940	47.811	3.5	11,260	Cf	Do
	Do	V	46	10.841	47.511	3.5	11,260	Cf	Fiscal year 1950
	Do	V	388	10.840	47.612	3.4	11,180	Cf	Mar. 30, 1950

1 Numbers in parentheses indicate the number of determinations made.

2 See Explanation of Symbols (p. 5).

3 Numbers above 1 indicate the number of deliveries averaged.

County	Sample Name	Weight	Moisture	Vol. Matter	Fixed Carbon	Total Carbon	Hydrogen	Nitrogen	Sulfur	Phosphorus	Calcium	Magnesium	Iron	Aluminum	Silica	Other	Analysis Date	
CRAWFORD COUNTY	Monmouth:																	
	Apex-Compton...	200	T	3.9	39.4	48.0	12.6	2.1									Oct. 27, 1949.	
	Do.	100	T	4.4	39.2	47.1	13.7	2.2									Do.	
	Do.	105	D	1.9	40.1	47.5	12.4	2.3									Fiscal year 1948.	
	Do.	350	T	1.1	38.5	50.3	11.2	2.5									Oct. 27, 1949.	
	Do.	550	D	5.1	38.5	51.0	10.5	2.0									Fiscal year 1950.	
	Mulberry:																	
	Clemens Nos. 22 and 23.	200	T	4.8	35.3	53.2	11.5	5.7										Nov. 2, 1949.
	Do.	200	T	4.7	38.3	51.8	9.9	3.6										Do.
	Do.	10,485	D	3.4	37.6	52.8	9.6	3.5										Fiscal year 1950.
	Do.	200	D	5.0	38.4	52.8	8.8	3.4										Nov. 2, 1949.
	Do.	384	D	4.3	37.1	53.2	9.7	3.6										Fiscal year 1948.
	Do.	450	D	4.3	37.1	53.5	8.8	3.6										Fiscal year 1949.
	Do.	479	D	3.3	36.7	54.1	9.2	4.0										Fiscal year 1950.
	Do.	300	T	0.9	37.1	54.0	8.0	3.7										Nov. 2, 1949.
Do.	78	D	4.1	36.5	54.2	10.9	4.2										Fiscal year 1948.	
Do.	141	D	2.7	37.3	53.3	10.4	3.6										Fiscal year 1949.	
Do.	266	D	3.4	37.7	53.4	9.2	3.7										Fiscal year 1950.	
Do.	172	D	8.7	35.6	54.1	9.2	3.4										Nov. 2, 1949.	
Do.	220	D	2.6	37.7	54.8	8.0	3.4										Fiscal year 1950.	
Pittsburg:																		
Eagle:																		
Do.	220	T	4.8	38.3	46.6	15.0	2.1										Nov. 8, 1949.	
Do.	51	D	3.8	35.5	49.0	13.2	2.4										Fiscal year 1949.	
Do.	150	T	5.8	37.3	49.1	13.6	2.6										Nov. 8, 1949.	
Do.	48	D	4.6	36.0	48.7	13.3	2.4										Fiscal year 1949.	
Do.	2,760	D	3.8	36.3	49.3	14.4	2.3										Fiscal year 1950.	
Do.	250	T	6.0	37.5	50.0	12.5	2.3										Nov. 8, 1949.	
Osage County																		
Osage City: Orbow.																		
		924	D	12.0	42.2	44.9	12.9	5.5										Fiscal year 1950.

KENTUCKY
East

County	Sample Name	Weight	Moisture	Vol. Matter	Fixed Carbon	Total Carbon	Hydrogen	Nitrogen	Sulfur	Phosphorus	Calcium	Magnesium	Iron	Aluminum	Silica	Other	Analysis Date		
BELL COUNTY	Blanche:																		
	Big Jim	50	T	2.6	41.1	57.2	1.3	0.7										June 5, 1950.	
	Do.	125	T	2.4	42.1	56.8	1.1	.7										Do.	
	Do.	75	T	2.9	37.0	56.2	6.8	.8										Do.	
	Capito:																		
	Atlas	50	T	2.5	41.3	54.3	4.4	1.0											June 9, 1950.
	Do.	80	T	2.1	39.2	53.3	7.5	1.1										Do.	
	Do.	102	D	2.1	38.0	53.8	8.2	1.4										Fiscal year 1949.	
	Do.	1,088	D	2.6	38.1	54.2	7.7	1.0										Fiscal year 1950.	
	Do.	1,088	D	2.6	37.6	53.1	9.3	1.1										Do.	
	Do.	131	D	2.2	38.5	52.1	9.4	1.4										Do.	
	Do.	275	T	4.0	37.2	51.1	11.7	1.6										June 9, 1950.	
	Do.	50	D	2.1	34.4	54.2	11.4	1.0										Fiscal year 1949.	
	Field:																		
	Crockett:																		
Do.	2,319	D	2.2	37.2	54.6	8.2	1.2											Fiscal year 1950.	
Do.	1,714	D	3.2	36.1	54.5	9.4	1.3											Do.	
Do.	1,951	D	2.5	38.8	56.0	5.2	.8											Fiscal year 1949.	
Fonds: Clearspint																			
No. 3	70	T	3.8	30.9	57.2	2.9	.6											June 14, 1950.	
Do.	280	T	5.8	38.1	54.3	7.6	.7											Do.	
Foundry: Black Rose																			
Do.	30	T	2.2	38.8	56.4	4.8	.6											June 29, 1950.	
Do.	50	T	3.3	38.6	56.7	4.7	.7											Do.	
Gravity: Premier-Jellico																			
Do.	100	T	3.3	33.4	49.2	4.12	.7											Do.	
Do.																		Do.	

1 See Explanation of Symbols (p. 5).
 * Numbers above 1 indicate the number of deliveries averaged.
 * Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

County	Locality	Sample No.	Sample Description	Weight (lb)	Moisture (%)	Volatiles (%)	Fixed Carbon (%)	Calorific Value (Btu/lb)	Analysis Date	Notes								
HARLAN COUNTY	Alve:	Dixie Star	Hvab	5-inch lump	100	T	2.5	39.5	55.6	4.9	1.0	13,810	14,160	12,440	1	Cf	May 30, 1950.	
			Hvab	3- by 5-inch	125	T	2.7	39.5	54.8	5.7	1.0	13,700	14,070	12,520	1	Cf	Do.	
			Hvab	do	1,287	D	2.6	39.9	55.4	4.7	1.0	13,960	14,330	12,470	1	Cf	Fiscal year 1949.	
			Hvab	do	500	T	3.5	37.3	54.0	8.7	1.2	13,040	13,600	12,420	1	Cf	May 30, 1950.	
			Hvab	do	150	T	2.5	39.9	57.4	2.7	0.6	14,270	14,630	12,470	1	Cf	May 29, 1950.	
	Harlan	Hvab	5-inch lump	180	T	2.8	40.2	56.8	3.0	0.9	14,210	14,620	12,310	1	Cf	Do.		
		Hvab	3- by 5-inch (W)	500	T	3.2	39.1	55.2	3.0	0.7	14,140	14,610	12,330	1	Cf	Do.		
		Hvab	1- by 3-inch (W)	140	T	4.8	39.3	57.8	2.9	0.7	13,920	14,620	12,360	1	Cf	Do.		
		Hvab	1/4- by 1-inch (W)	175	T	3.0	37.0	56.8	6.2	0.8	13,670	14,090	12,390	1	Cf	Do.		
		Hvab	0 by 1/4-inch (W)	30	T	2.8	41.2	56.6	2.2	1.0	14,130	14,540	12,490	1	Cf	June 8, 1950.		
	Cawood:	Mill Ridge	Hvab	6-inch lump	65	T	2.9	40.4	56.7	2.9	0.8	14,080	14,490	12,540	1	Cf	Do.	
			Hvab	3- by 6-inch	65	T	3.2	39.7	55.8	4.5	0.9	13,780	14,230	12,520	1	Cf	Do.	
			Hvab	1- by 3-inch	100	T	3.8	39.3	54.8	5.9	0.9	13,520	14,050	12,550	1	Cf	Do.	
			Hvab	1/4- by 1-inch	45	T	7.4	34.4	54.5	11.1	1.0	12,120	13,090	12,730	1	Cf	Do.	
			Hvab	0 by 1/4-inch	125	T	2.3	41.1	55.7	3.2	1.0	14,230	14,580	12,730	1	Cf	June 7, 1950.	
Coalwood:	Marion	Hvab	6-inch lump	180	T	2.5	39.4	56.1	4.5	1.1	13,940	14,300	12,750	1	Cf	Do.		
		Hvab	3- by 6-inch	125	T	2.6	39.7	55.8	4.5	1.0	13,980	14,340	12,750	1	Cf	Do.		
		Hvab	2- by 3-inch	580	T	3.3	37.8	54.4	7.8	1.0	13,280	13,740	12,570	1	Cf	Do.		
		Hvab	0 by 2-inch	50	T	3.9	37.6	55.2	7.2	0.7	13,080	13,610	12,780	1	Cf	Do.		
		Hvab	6-inch lump	50	T	4.0	38.9	55.5	5.6	0.9	13,340	13,900	12,600	1	Cf	Do.		
Queen Mary	High Spint.	Hvab	3- by 6-inch	60	T	4.0	38.8	54.3	7.2	1.0	13,070	13,620	12,620	1	Cf	Do.		
		Hvab	2- by 3-inch	50	T	4.0	38.8	54.3	7.2	1.0	13,070	13,620	12,620	1	Cf	Do.		
		Hvab	0 by 2-inch	150	T	5.9	37.4	52.9	9.7	1.1	12,460	13,250	12,500	1	Cf	Do.		
		Hvab	1 1/2- by 7-inch	258	D	2.3	40.7	54.5	4.8	1.6	13,970	14,300	12,800	1	Cf	Fiscal year 1948.		
		Hvab	0 by 1 1/2-inch	3,184	D	3.3	39.8	53.2	7.8	1.9	13,380	13,840	12,240	17	Cf	Do.		
Evarts:	Dartmont	Hvab	1/4- by 7/8-inch (OT)	130	T	2.6	41.3	52.1	6.3	2.2	13,760	14,130	12,180	1	Cf	May 26, 1950.		
		Hvab	0 by 1/4-inch	80	T	3.9	38.3	52.5	8.0	2.2	13,250	13,790	12,290	1	Cf	Do.		
		Hvab	6-inch lump	40	T	2.5	39.7	56.8	3.5	0.8	14,180	14,550	12,910	1	Cf	June 6, 1950.		
		Hvab	3- by 6-inch	100	T	2.5	40.9	56.2	3.6	0.8	14,190	14,550	12,910	1	Cf	Do.		
		Hvab	2- by 3-inch	332	D	2.4	38.8	56.2	4.1	0.8	14,030	14,400	12,910	1	Cf	Fiscal year 1948.		
Grays Knob:	Charlottesville	Hvab	2- by 3-inch	80	D	2.1	40.1	56.3	3.6	0.6	14,250	14,560	12,910	1	Cf	June 6, 1950.		
		Hvab	1 1/2- by 7-inch	99	D	2.1	40.1	56.3	3.6	0.6	14,100	14,430	12,910	1	Cf	Fiscal year 1948.		
		Hvab	0 by 2-inch	350	D	3.4	39.8	56.6	3.9	0.9	13,980	14,470	12,910	1	Cf	June 6, 1950.		
		Hvab	do	3,110	D	2.8	37.8	57.6	4.6	0.7	13,930	14,330	12,800	3	Cf	Fiscal year 1948.		
		Hvab	5-inch lump	450	T	3.0	40.8	57.2	2.0	0.6	5.5	82.4	1.6	7.9	14,280	14,730	12,280	1
Kenvir:	Great Heart No. 30	Hvab	3- by 5-inch	225	T	3.2	40.6	56.0	3.4	0.5	14,020	14,490	12,280	1	Cf	Do.		
		Hvab	2- by 3-inch	135	T	3.3	39.4	57.1	3.5	0.5	13,930	14,420	12,280	1	Cf	Do.		
		Hvab	1/4- by 1-inch	575	T	3.4	38.8	56.7	4.5	0.6	13,800	14,280	12,280	1	Cf	Do.		
		Hvab	0 by 1/4-inch	175	T	5.1	36.4	58.1	5.5	0.6	13,350	14,770	12,280	1	Cf	Do.		
		Hvab	5-inch lump	200	T	3.2	39.6	58.2	2.2	0.4	14,100	14,560	12,080	1	Cf	May 25, 1950.		
Mary Alice:	Great Heart No. 31	Hvab	3- by 5-inch	200	T	3.3	39.8	58.1	2.1	0.4	14,120	14,600	12,150	1	Cf	Do.		
		Hvab	2- by 3-inch	90	T	3.3	39.9	57.9	2.2	0.4	14,090	14,570	12,150	1	Cf	Do.		
		Hvab	1/4- by 1-inch (OT)	525	T	3.8	38.3	57.1	4.6	0.3	13,720	14,230	12,180	1	Cf	Do.		
		Hvab	0 by 1/4-inch	175	T	5.5	35.9	57.5	6.6	0.4	13,070	13,840	12,180	1	Cf	Do.		
		Hvab	5-inch lump	40	T	2.4	39.8	57.4	2.8	0.7	14,370	14,720	12,730	1	Cf	June 2, 1950.		
Totz:	Totz	Hvab	3- by 5-inch	80	T	2.4	39.1	57.3	3.6	0.4	14,250	14,610	12,710	1	Cf	Do.		
		Hvab	1/4- by 1-inch	200	T	2.6	38.8	56.8	5.6	0.5	13,880	14,240	12,620	1	Cf	Do.		
		Hvab	0 by 1/4-inch	75	T	4.6	34.8	58.1	7.3	0.6	13,250	13,890	12,550	1	Cf	Do.		
		Hvab	1/4- by 1 1/4-inch	110	D	4.8	38.3	54.9	6.8	1.2	13,330	13,990	12,730	1	Cf	Fiscal year 1948.		
		Hvab	do	3,143	D	8.5	32.1	52.1	15.8	1.9	11,180	12,220	11,810	16	Cf	Do.		
JACKSON COUNTY	Sand Gap:	H and S	Bond	0 by 2 1/4-inch	1,200	D	15.5	32.6	49.5	17.9	1.6	10,060	11,900	8		Cp	Fiscal year 1950.	
			Bond	50	D	5.9	34.7	54.6	10.7	1.1	12,220	12,990	1		Cp	Fiscal year 1949.		
			Bond	500	D	4.7	32.9	51.0	16.1	1.5	11,570	12,140	1		Cp	Do.		
			Bond	400	D	10.4	32.0	54.0	14.0	1.5	11,280	12,590	1		Cp	Fiscal year 1948.		
			Bond	do	3,143	D	8.5	32.1	52.1	15.8	1.9	11,180	12,220	16		Cp	Do.	

Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 6).
2 Numbers above 1 indicate the number of deliveries averaged.

Kons:	Elkhorn No. 3	Hvab	Run-of-mine (crushed to 2-inch)	Run-of-mine	T	D	3.339.454.8	5.8	1.6	13,710	14,180	1,2,250	1	Cf	6 1/2	May 22, 1950.	
Kona Nos. 2 and 3	do.				1,117	D	5.038.256.6	5.2	1.7	13,450	14,160	3		Cf		Fiscal year 1949.	
Do.	do.		do.		3,365	D	4.438.055.7	6.3	1.5	13,490	14,110	20,230	3	Cf (19), Cg (1)		Fiscal year 1950.	
Do.	do.	Hvab	5-inch lump		60	D	2.939.457.4	3.0	1.8	14,160	14,580	12,650	1	Cf		Do.	
Do.	do.	Hvab	2 by 5-inch		90	T	3.038.157.9	4.0	1.1	13,970	14,400	12,560	1	Cf		Do.	
Do.	do.	Hvab	1 by 2-inch		75	T	3.538.057.7	4.3	1.0	13,870	14,370	12,560	1	Cf		Do.	
Do.	do.		1/4 by 1-inch		75	T	4.737.256.8	6.0	1.0	13,420	14,070	12,680	1	Cf		Do.	
Do.	do.		0 by 1/4-inch		50	T	6.934.357.7	7.8	1.8	12,840	13,790	12,540	1	Cf	5 1/2	Do.	
Premium:					50	T	2.240.452.5	7.1	2.9	5.9	13,780	14,100	12,230	1	Cf	6 1/2	Dec. 6, 1949.
Do.	Amburgey	Hvab	5-inch lump		100	T	2.938.449.7	11.7	4.5	12,870	13,250	12,230	1	Cp	47	Do.	
Do.	do.		0 by 5-inch		100	D	2.737.855.3	6.9	.9	13,630	14,000	1	Cp		Fiscal year 1949.		
Whitesburg: Belcraft	Hazard No. 4, Whitesburg, and Elkhorn.				1,053	D	2.599.148.1	12.8	2.8	12,550	12,870	6		Cf		Do.	
MARTIN COUNTY	Warfield		2 1/2 by 5-inch														
Kermit (W. Va.): Earlston.		Hvab	5-inch lump		75	T	4.140.555.3	4.2	.6	13,620	14,210	12,910+	1	Cf		May 18, 1950.	
Do.	Hazard No. 7		2 by 5-inch (W)		225	T	6.237.053.4	5.7	.6	13,400	13,930	12,910+	1	Cf		Do.	
Do.	do.		0 by 2-inch (3/8 by 2-inch W)		105	D	4.437.751.2	11.1	2.9	12,580	13,170	12,340	1	Cf	3 1/2	Do.	
Diablock: Fourseam Nos. 1 and 2.	Hazard Nos. 4 and 9.		1/4 by 1 1/2 inch													Fiscal year 1950.	
Glomawr: (Eben)	No. 9	Hvab	5-inch lump		70	T	3.442.653.5	3.9	2.0	7.1	13,860	14,350	12,730	1	Cf		May 16, 1950.
Do.	do.		2 by 5-inch (W)		50	T	3.640.352.7	7.0	1.4	13,320	13,820	12,910+	1	Cf		Do.	
Do.	do.		0 by 2-inch (W)		120	T	5.739.452.5	8.1	2.1	12,900	13,670	12,680	1	Cf	6	Do.	
Do.	Nos. 7 and 9	Hvab	5-inch lump		140	T	3.741.354.7	4.0	1.0	13,750	14,280	12,910+	1	Cf		May 17, 1950.	
Do.	do.		2 by 5-inch (W)		100	T	3.739.353.7	7.0	1.1	13,300	13,810	12,910+	1	Cf		Do.	
Do.	do.		0 by 2-inch (W)		250	T	6.837.153.7	9.2	1.1	12,470	13,370	12,730	1	Cf	3 1/2	Do.	
Do.	do.		0 by 2-inch		725	D	6.436.654.0	9.4	.7	12,580	13,440	32,910+	3	Cf (2), Cp (1)		Fiscal year 1949.	
Harveyton:	Hazard No. 6		3 by 5-inch		40	D	3.137.054.3	8.7	.8	13,070	13,490	1		Cf		Fiscal year 1948.	
Do.	do.		do.		25	D	3.438.354.8	6.9	.7	13,310	13,770	1		Cp		Fiscal year 1949.	
Hardbury:	No. 7	Hvab	5-inch lump		100	T	4.038.055.6	6.4	.5	13,400	13,960	12,910+	1	Cf		May 23, 1950.	
Do.	do.		2 by 5-inch		100	T	4.237.054.9	8.1	.5	13,170	13,740	12,910+	1	Cf		Do.	
Do.	do.		0 by 2-inch		250	T	6.536.656.7	6.7	.6	12,970	13,860	12,910+	1	Cf	3 1/2	Do.	
Katy:	Hazard No. 4	Hvab	8-inch lump		25	T	2.741.355.0	3.7	1.0	14,010	14,400	12,170	1	Cf		May 16, 1950.	
Do.	do.		1/4 by 1-inch (OT)		115	T	3.140.054.0	6.0	1.1	13,680	14,120	12,200	1	Cf		Do.	
Do.	do.		(3/4 by 8-inch crushed to 1-inch)														
Do.	do.		0 by 3/4-inch		115	T	4.737.754.7	7.6	.9	13,120	13,760	12,530	1	Cf		Fiscal year 1949.	
Do.	do.		0 by 1 1/4-inch		385	D	6.635.456.4	8.2	.9	12,800	13,700	4		Cf (3), Cp (1)		Fiscal year 1948.	
Do.	do.		do.		254	D	4.136.154.6	9.3	1.0	12,930	13,470	12,710	1	Cf	5 1/2	Do.	
Leatherwood: Leatherwood	do.																
Lothair: Blue Grass No. 2	Nos. 4, 7, and 9.																
Sunday:																	
Defiance:	Hazard No. 4	Hvab	5-inch lump		120	T	2.939.757.4	2.9	.9	14,240	14,670	12,570	1	Cf		May 15, 1950.	
Do.	do.		2 by 5-inch		150	T	2.939.856.7	3.5	1.0	14,170	14,590	12,520	1	Cf		Do.	
Do.	do.		0 by 2-inch		250	T	4.336.756.3	7.0	.8	13,340	13,940	12,910+	1	Cf	5 1/2	Do.	
Do.	do.		5-inch lump		100	T	2.839.255.8	5.0	1.4	13,830	14,240	12,640	1	Cf		May 19, 1950.	
Do.	do.		3 by 5-inch		75	T	2.938.555.0	6.5	1.7	13,600	14,000	12,490	1	Cf		Do.	
Do.	do.		2 by 5-inch		94	D	3.538.257.4	4.4	.9	14,000	14,360	2		Cf		Fiscal year 1950.	
Do.	do.		2 by 3-inch		40	T	3.138.255.6	6.2	1.5	13,630	14,060	12,580	1	Cf		May 16, 1950.	
Do.	do.		do.		102	D	2.639.256.5	4.3	1.1	14,010	14,380	2		Cf		Fiscal year 1950.	
Do.	do.		0 by 2-inch		400	T	5.636.854.7	8.5	1.6	12,880	13,550	12,650	1	Cf	6	Do.	
Do.	do.		5-inch lump		100	T	4.040.755.5	3.8	.6	13,700	14,270	12,910+	1	Cf		May 20, 1950.	
Do.	do.		2 by 5-inch		100	T	4.437.755.9	6.4	.6	13,300	13,920	12,910+	1	Cp	1 1/2	Do.	
Do.	do.		0 by 2-inch		200	T	7.836.557.7	5.8	.5	12,730	13,810	12,780	1	Cf	42	Do.	
Do.	No. 5A	Hvab	5-inch lump		25	T	3.441.351.8	6.9	.7	8.5	13,860	13,840	12,910+	1	Cf		Do.
Do.	do.		2 by 5-inch		25	T	4.138.552.4	9.1	.8	13,360	13,400	12,910+	1	Cf		Do.	
Do.	do.		0 by 2-inch		50	T	5.136.851.5	11.7	.9	12,160	12,820	12,910+	1	Cf	4 1/2	Do.	

1 See Explanation of Symbols (p. 5). 2 Numbers above 1 indicate the number of deliveries averaged. 3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Earlington:	No. 11.	T	7.544	4.501	5.5	3.1	12,700	13,730	1,2160	1	Cf	Mar. 7, 1949.	
Hecla	do.	245	7.944	9.49	8.3	3.1	9.0	12,680	13,760	1	Cf	Do.	
Do.	do.	594	12.0	43.4	50.6	6.0	3.2	12,630	13,670	1	Cf	Do.	
Do.	do.	517	8.4	42.9	49.7	7.4	3.4	12,290	13,420	2	Cf	Fiscal year 1950.	
Do.	do.	114	8.0	41.8	45.5	12.7	2.9	8.6	11,620	12,620	1	Cf	Mar. 4, 1949.
Do.	No. 12	424	7.840	6.46	4.33	3.2	11,530	12,500	12,260	1	Cf	May 3, 1950.	
Do.	do.	750	6.640	7.45	8.13	5.3	11,600	12,420	64	1	Cf	Fiscal year 1950.	
Do.	do.	15,129	7.240	4.46	1.33	3.0	11,550	12,450	35	1	Cf	Do.	
Do.	do.	10,122	10.540	9.45	8.13	3.2	11,190	12,500	12,340	1	Cf	Mar. 4, 1949.	
Do.	do.	424	13.241	0.46	2.12	8.2	10,930	12,600	12,180	1	Cf	May 3, 1950.	
Do.	do.	750	7.940	4.46	9.12	7.3	11,600	12,590	12,350	1	Cf	Do.	
Do.	do.	58	7.240	0.46	0.14	0.2	11,470	12,360	9	1	Cf	Fiscal year 1950.	
Do.	do.	3,663	7.245	0.49	7.53	3.2	8.9	12,750	13,740	12,140	1	Cf	Mar. 21, 1949.
Do.	No. 11	300	8.044	4.50	2.54	3.3	12,590	13,680	12,150	1	Cf	Do.	
Do.	do.	800	11.544	8.49	4.58	3.2	12,090	13,650	12,130	1	Cf	Do.	
Do.	do.	630	8.842	6.49	8.76	3.5	12,160	13,330	2	1	Cf	Fiscal year 1950.	
Do.	do.	93	12.242	3.48	9.88	3.2	11,560	13,170	12,420	1	Cf	Mar. 21, 1949.	
Do.	do.	520	8.441	4.45	9.12	3.0	8.9	11,500	12,550	12,440	1	Cf	Mar. 22, 1949.
Do.	No. 12	550	7.942	4.45	1.12	3.0	11,620	12,610	12,470	1	Cf	May 5, 1950.	
Do.	do.	800	7.141	9.45	8.12	3.2	11,670	12,560	25	1	Cf	Fiscal year 1950.	
Do.	do.	4,530	8.041	4.46	2.12	3.1	11,590	12,600	12	1	Cf	Do.	
Do.	do.	2,390	11.940	3.45	5.14	3.2	10,860	12,320	12,360	1	Cf	Mar. 22, 1949.	
Do.	do.	610	10.442	3.45	5.12	3.3	11,300	12,620	12,470	1	Cf	May 5, 1950.	
Do.	do.	850	8.641	2.45	6.13	3.3	11,440	12,520	22,410	2	Cf	Do.	
Do.	do.	455	7.940	2.46	5.13	3.1	11,430	12,410	12	1	Cf	Fiscal year 1950.	
Do.	do.	7,204	6.944	2.50	2.56	3.5	8.0	12,790	13,730	12,030	1	Cf	Mar. 2, 1949.
Do.	No. 11	165	7.144	4.49	7.59	3.5	12,720	13,700	12,030	1	Cf	Do.	
Do.	do.	165	10.843	2.50	1.67	3.2	12,130	13,610	12,080	1	Cf	Do.	
Do.	do.	110	7.943	0.51	1.59	3.4	12,640	13,720	12,080	1	Cf	Do.	
Do.	do.	165	8.036	5.47	8.15	4.1	11,110	12,090	12,100	1	Cf	Do.	
Do.	do.	250	7.343	6.51	1.53	3.4	9.5	12,700	13,700	12,280	1	Cf	Apr. 14, 1949.
Do.	do.	50	6.841	7.51	9.64	3.6	12,470	13,380	4	1	Cf	Fiscal year 1949.	
Do.	do.	205	7.443	1.51	6.53	3.4	12,700	13,720	12,210	1	Cf	Apr. 14, 1949.	
Do.	do.	104	7.243	1.50	6.63	4.2	12,550	13,520	1	1	Cf	Fiscal year 1949	
Do.	do.	50	9.142	1.51	3.66	3.6	12,240	13,460	2	1	Cf	Do.	
Do.	do.	556	7.643	5.09	5.63	3.5	12,630	13,670	12,180	1	Cf	Apr. 14, 1949.	
Do.	do.	106	7.242	2.50	8.70	3.6	12,500	13,470	2	1	Cf	Fiscal year 1949.	
Do.	do.	138	7.943	1.50	6.63	3.5	12,470	13,540	19,200	2	Cf	Fiscal year 1950.	
Do.	do.	8,521	11.142	7.51	6.23	3.4	12,020	13,520	12,180	1	Cf	Apr. 14, 1949.	
Do.	do.	156	8.042	8.50	6.64	3.4	12,370	13,540	9	1	Cf	Fiscal year 1950.	
Do.	do.	4,050	8.542	8.50	6.33	3.4	12,350	13,500	11	1	Cf	Fiscal year 1950.	
Do.	do.	2,978	8.042	5.48	9.13	3.9	12,020	13,070	22,160	2	Cf	Do.	
Do.	do.	215	10.041	2.50	8.03	3.4	11,910	13,370	72,140	2	Cf	Fiscal year 1949.	
Do.	do.	1,102	9.641	0.51	6.73	3.3	12,090	13,230	45,210	13	Cf	Fiscal year 1950.	
Do.	do.	8,660	8.540	8.50	4.88	3.4	11,900	13,010	32,230	3	Cf	Fiscal year 1949.	
Do.	do.	470	10.643	4.50	6.13	3.2	12,050	13,480	2	1	Cf	Fiscal year 1950.	
Do.	do.	100	13.741	8.51	9.63	3.2	11,740	13,370	52,060	1	Cf	Do.	
Do.	do.	426	8.040	2.46	5.13	3.3	11,680	13,530	12,180	1	Cf	Apr. 14, 1949.	
Do.	do.	110	6.538	4.44	2.16	3.4	11,070	11,830	1	1	Cf	Fiscal year 1949.	
Do.	No. 12	2,578	6.740	8.15	7.14	3.4	11,460	12,280	1	1	Cf	Do.	
Do.	do.	325	6.340	4.46	4.12	3.3	11,680	12,460	1	1	Cf	Do.	
Do.	do.	324	10.338	3.46	2.15	3.3	10,710	11,910	22,180	1	Cf	Do.	
Do.	do.	324	7.840	1.45	3.14	3.3	11,300	12,260	22,230	2	Cf	Do.	
Do.	do.	467	8.938	3.47	1.13	3.3	11,100	12,320	72,240	3	Cf	Do.	
Do.	do.	345											
Do.	do.	1,517											

1 See Explanation of Symbols (p. 5). 2 Numbers above 1 indicate the number of deliveries averaged. 3 Numbers in parentheses indicate the number of determinations made.

Browder:	No. 9	Hvbb	6-inch lump	6.1	139.8	48.0	12.2	4.8	11,970	Cf	Apr. 27, 1949.
Do.	100	Hvbb	3- by 6-inch	50	6.4	41.9	48.5	9.6	1,200	Cf	Do.
Do.	114	Hvbb	do.	100	5.7	40.9	49.0	10.1	1,200	Cf	Fiscal year 1950.
Do.	157	do.	do.	114	6.3	40.4	49.8	9.8	2	Cf	Do.
Do.	324	Hvbb	1 1/4- by 6-inch	157	6.6	41.3	49.2	9.5	1,200	Cf	Apr. 27, 1949.
Do.	do.	do.	do.	324	6.6	41.4	49.1	9.5	1,200	Cf	Fiscal year 1950.
Do.	do.	do.	do.	64	5.8	41.4	49.1	9.5	1,970	Cf	Apr. 27, 1949.
Do.	380	do.	0 by 1 1/4-inch	64	7.9	39.4	48.7	11.9	1,970	Cp	Fiscal year 1949.
Do.	do.	do.	do.	52	6.9	40.5	47.1	12.4	1,940	Cf	Fiscal year 1950.
Do.	250	do.	do.	250	6.6	40.2	47.7	12.1	1	Cf	Do.
Central City:											
Brier Creek:	No. 11		2- by 6-inch (W)	150	6.5	44.8	50.3	4.9	12,100	Cf	Apr. 19, 1949.
Do.	do.		1- by 3-inch (W)	156	7.2	44.1	50.4	5.5	12,050	Cf	Do.
Do.	do.		1 1/4- by 2-inch (W)	156	11.1	45.0	49.2	5.8	12,150	Cf	Do.
Do.	do.		28-mesh by 1 1/4-inch (W)	484	9.9	43.3	49.9	6.8	12,100	Cf	Do.
Cherry Hill:	No. 9		1 1/4- by 3-inch	844	6.5	40.7	51.0	8.3	12,310	Cf	Fiscal year 1949.
Do.	do.		do.	863	7.1	41.3	49.0	9.7	12,220	Cf	Fiscal year 1950.
Do.	do.		0 by 1 1/4-inch	500	9.8	38.0	48.9	13.1	12,510	Cf	Fiscal year 1948.
Pacific:	do.		1 1/2- by 6-inch	6,072	6.9	39.9	47.7	12.4	11,740	Cf	Fiscal year 1949.
Do.	do.		1 1/4- by 6-inch	4,072	6.7	40.0	48.8	11.2	11,920	Cf	Do.
Do.	do.		1 1/2- by 3-inch	47	7.1	39.0	50.8	10.2	12,110	Cf	Do.
Do.	do.		1 1/4- by 3-inch	47	7.0	40.0	48.5	10.9	11,960	Cf	Fiscal year 1950.
Do.	do.		3/4- by 1 1/2-inch	899	6.5	40.9	50.1	9.0	12,350	Cf	Do.
Do.	do.		3/4- by 1 1/4-inch	6,009	8.0	41.1	48.7	10.2	11,980	Cf (9), Cp (1)	Fiscal year 1949.
Do.	do.		0 by 2-inch	3,223	8.5	38.8	47.8	13.2	11,440	Cf (2), Cp (1)	Fiscal year 1950.
Do.	do.		do.	47	7.8	38.8	47.2	14.5	11,310	Cf	Fiscal year 1948.
Do.	do.		0 by 1 1/2-inch	2,445	8.4	39.1	47.2	14.5	10,260	Cf	Do.
Do.	do.		0 by 1 1/4-inch	10,951	8.9	38.8	47.8	13.8	11,200	Cf	Fiscal year 1949.
Do.	do.		do.	1,072	8.2	38.8	47.7	13.8	11,330	Cf	Fiscal year 1950.
Sunbeam:	do.		1 1/4-inch lump	1,225	8.1	39.0	50.0	10.3	11,700	Cf	Fiscal year 1948.
Do.	do.		1 1/4- by 6-inch	231	8.5	38.8	50.0	10.6	11,630	Cf	Do.
Do.	do.		0 by 1 1/4-inch	1,216	13.2	34.3	48.1	17.6	10,030	Cf (2), Cp (1), NAB (1)	Do.
Drakesboro:	do.		6-inch lump	50	7.0	43.0	48.5	8.5	12,260	Cf	May 16, 1949.
Black Diamond:	do.		3- by 6-inch	300	7.5	43.0	48.7	8.3	12,060	Cf	Do.
No. 6:	do.		1 1/4- by 3-inch	275	10.0	39.8	48.0	12.6	12,080	Cf	Do.
Do.	do.		0 by 1 1/4-inch	150	10.6	39.8	48.0	12.6	12,080	Cf	Do.
Do.	do.		do.	280	11.2	37.8	47.2	13.4	10,280	Cf (1)	Fiscal year 1948.
Do.	do.		do.	104	7.5	44.0	50.3	9.9	12,610	Cf (1), Cp (2)	Fiscal year 1949.
Caney Creek:	No. 11		3- by 6-inch (W)	216	8.3	43.8	50.3	3.8	12,230	Cf	May 9, 1949.
Do.	do.		1- by 3-inch (W)	216	11.6	43.8	50.0	9.4	12,230	Cf	Do.
Do.	do.		1/4- by 1-inch (W)	110	13.1	42.8	49.9	7.3	11,300	Cf	Do.
Do.	do.		28-mesh by 1 1/4-inch (W)	50	6.5	40.3	48.2	11.5	11,980	Cf	Apr. 3, 1949.
Kirk No. 5:	do.		6-inch lump	50	7.2	41.6	48.3	9.1	12,000	Cf	Do.
Do.	do.		3- by 6-inch	110	7.2	41.6	48.3	9.1	11,970	Cf	Do.
Do.	do.		1 1/4- by 3-inch	1,917	6.9	41.2	50.0	8.8	12,360	Cf	Fiscal year 1950.
Do.	do.		1- by 3-inch	165	8.9	39.2	47.5	13.3	11,940	Cf	Apr. 3, 1949.
Do.	do.		0 by 1 1/4-inch	300	9.1	39.6	51.7	8.7	12,080	Cf	Mar. 10, 1949.
Graham:	do.		3- by 7-inch (W)	208	9.7	40.6	51.1	8.3	12,030	Cf	Do.
Do.	do.		2- by 3-inch (W)	104	9.6	40.6	51.0	8.4	12,030	Cf	Do.
Do.	do.		1 1/4- by 3-inch (W)	385	11.3	37.8	50.5	11.7	11,970	Cf	Do.
Do.	do.		0 by 2-inch (1 1/4- by 2-inch W)	28,617	10.5	39.3	49.3	11.4	30,200	Cf	Fiscal year 1950.
Do.	do.		0 by 2-inch	283	7.3	37.3	47.0	15.7	11,200	Cf	Do.
Do.	do.		0 by 1 1/4-inch	165	10.7	37.4	50.1	12.5	11,970	Cf	Mar. 10, 1949.
Do.	do.		0 by 1 1/2-inch	113	8.3	38.8	48.9	12.3	11,650	Cf	Fiscal year 1949.
Do.	do.		do.	259	10.7	38.3	45.3	16.4	12,020	Cf	Fiscal year 1950.
Do.	do.		do.	77	13.8	38.1	48.6	13.3	10,480	Cp	Do.
Greenville:	do.		Run-of-mine	50	6.7	40.5	47.8	11.7	12,630	Cf	Apr. 6, 1949.
Brown:	do.		8-inch lump	52	7.2	40.8	48.6	10.6	12,030	Cf	Do.
Pond Creek:	do.		3- by 3-inch	54	7.1	40.6	49.3	10.1	12,000	Cf	Do.
Do.	do.		2- by 3-inch	274	6.6	41.7	49.4	8.9	12,310	Cf	Fiscal year 1950.
Do.	do.		1 1/4- by 3-inch	56	7.2	41.3	49.4	9.3	12,000	Cf	Apr. 6, 1949.
Do.	do.		1 1/4- by 2-inch	174	10.1	38.3	49.6	12.1	11,970	Cf	Do.

1 See Explanation of Symbols (p. 5).
 2 Numbers in parentheses indicate the number of determinations made.

3 Numbers in parentheses indicate the number of deliveries averaged.

Locality	Sample No.	Preparation	Weight (lb)	Moisture (%)	Vol. (cu ft)	Calorific Value (Btu)	Analysis	Fiscal Year	
South Carrollton: Rio Verde	Do.	do.	288	8.540, 4.47, 9.11, 7.1	11,690, 12,770	12,060, 12,990	Cf	Fiscal year 1950.	
	Do.	do.	250	7.141, 2.48, 6.10, 2.3	11,860, 12,890	12,060, 12,990	Cf	Apr. 26, 1949.	
	Do.	do.	632	8.040, 0.49, 1.10, 9.4	11,910, 12,970	11,910, 12,970	Cf	Fiscal year 1948.	
	Do.	do.	2,328	8.240, 5.49, 2.10, 3.4	11,310, 12,420	11,310, 12,420	Cf	Fiscal year 1948.	
	Do.	do.	1,296	8.937, 7.49, 6.12, 7.3	10,840, 11,940	11,980	Cf (4), Cp (2)	Fiscal year 1948.	
	Do.	do.	473	9.236, 9.47, 7.15, 4.3	10,840, 11,940	31,980	Cf	Apr. 26, 1949.	
	Do.	do.	250	9.138, 0.47, 1.14, 6.4	11,500, 12,270	12,100	Cf	Fiscal year 1948.	
	Do.	do.	244	10.035, 7.50, 1.14, 2.4	11,900, 12,430	22,060	Cf	Fiscal year 1950.	
	Do.	do.	6,865	9.537, 6.47, 6.14, 8.4	11,000, 12,150	15,210	Cf (13), Cp (2)	Fiscal year 1948.	
	Do.	do.	739	8.336, 3.47, 5.16, 2.4	10,970, 11,960	12,000	Cf	Fiscal year 1949.	
White Plains: Scott and Bassett	Do.	do.	1,266	10.737, 6.48, 6.13, 8.4	11,070, 12,400	91,990	Cf (7), Cg (2)	Fiscal year 1949.	
	Do.	do.	5,764	9.838, 3.48, 0.13, 7.4	11,180, 12,390	13,270	Cf	Fiscal year 1950.	
	Do.	do.	90	11.540, 0.53, 9.9, 1.8	11,990, 13,560	12,450	Cf	May 5, 1950.	
	Do.	do.	50	9.393, 3.54, 8.5, 9.1	12,300, 13,610	12,150	Cf	May 4, 1949.	
	Do.	do.	75	11.941, 2.52, 8.6, 0.1	11,910, 13,530	12,370	Cf	May 5, 1950.	
	Do.	do.	50	9.940, 0.53, 8.6, 2.0	12,200, 13,580	12,210	Cf	May 4, 1949.	
	Do.	do.	46	8.038, 0.55, 2.5, 1.8	12,380, 13,470	1	Cf	Fiscal year 1950.	
	Do.	do.	150	11.641, 0.52, 0.7, 0.1	11,820, 13,380	12,460	Cf	May 5, 1950.	
	Do.	do.	156	9.540, 1.53, 2.6, 7.1	12,200, 13,520	12,420	Cf	May 4, 1949.	
	Do.	do.	200	12.340, 7.52, 0.7, 3.1	11,710, 13,350	12,210	Cf	May 5, 1950.	
OHO COUNTY	Do.	do.	385	10.539, 8.51, 6.8, 6.2	11,870, 13,260	12,360	Cf	May 4, 1949.	
	Do.	do.	150	14.639, 7.51, 1.9, 2.1	11,130, 13,030	12,500	Cf	May 5, 1950.	
	Do.	do.	1,409	11.139, 7.52, 0.8, 3.1	11,720, 13,180	62,400	Cf	Fiscal year 1950.	
	Do.	do.	52	12.139, 4.51, 7.8, 9.1	11,520, 13,110	12,280	Cf	Do.	
	Do.	do.	1,064	8.537, 7.46, 8.15, 5.3	11,140, 12,170	32,070	Cf	Fiscal year 1948.	
	Beaver Dam: Kentucky	Do.	do.	5,323	7.940, 0.49, 1.10, 9.3	11,820, 12,830	52,080	Cf	Fiscal year 1949.
		Do.	do.	750	6.743, 4.48, 0.8, 3.7	12,410, 13,310	12,000	Cf	June 3, 1949.
		Do.	do.	700	6.844, 0.47, 7.8, 3.9	12,510, 13,390	12,040	Do.	
		Do.	do.	624	8.943, 8.48, 4.7, 8.3	12,430, 13,340	12,020	Do.	
		Do.	do.	210	8.041, 5.50, 7.7, 8.5	12,360, 13,430	22,000	Do.	
Do.		do.	550	10.244, 0.47, 9.8, 1.3	11,970, 13,330	12,000	Cf	Fiscal year 1949.	
Do.		do.	50	10.442, 4.48, 7.8, 9.3	11,840, 13,210	12,020	Do.		
Do.		do.	2,362	7.842, 4.49, 0.8, 6.8	12,200, 13,230	6	Cf	Fiscal year 1950.	
Do.		do.	1,019	8.441, 5.49, 6.8, 9.3	12,080, 13,190	8	Cf	Fiscal year 1949.	
Do.		do.	30,907	7.942, 0.48, 8.9, 2.7	12,100, 13,140	75,210	Cf (74), Cg (1)	Fiscal year 1950.	
Centerdown: Kentucky	Do.	do.	2,772	7.642, 1.49, 3.8, 6.3	12,220, 13,220	2	Cf	Do.	
	Do.	do.	2,090	7.041, 1.48, 3.10, 6.3	11,980, 12,880	18	Cf	Do.	
	Do.	do.	114	8.042, 0.48, 7.9, 3.7	12,050, 13,100	5	Cf	Do.	
	Do.	do.	1,400	10.938, 4.49, 6.11, 0.3	11,560, 12,970	22,130	Cf	Fiscal year 1948.	
	Do.	do.	50	12.137, 0.46, 4.16, 6.3	10,230, 11,640	32,080	Cp	Do.	
	Do.	do.	200	7.342, 4.49, 4.8, 2.9	12,380, 13,360	12,050	Cf	May 12, 1949.	
	Do.	do.	50	7.942, 4.49, 5.8, 1.3	12,280, 13,330	12,180	Cf	Do.	
	Do.	do.	432	8.242, 6.49, 1.8, 3.9	12,200, 13,300	12,360	Do.		
	Do.	do.	200	8.442, 5.49, 7.8, 2.7	12,020, 13,320	12,440	Do.		
	Do.	do.	440	10.742, 7.49, 2.8, 1.1	11,860, 13,290	12,420	Do.		
Harford: Tichenor	Do.	do.	20	8.641, 1.49, 8.9, 1.1	11,970, 13,100	12,130	Cf	May 2, 1950.	
	Do.	do.	130	8.442, 2.49, 2.1, 6.1	12,080, 13,200	12,100	Cf	Do.	
	Do.	do.	150	10.040, 1.48, 8.1, 3.4	11,470, 12,750	11,970	Do.		
	Do.	do.	130	9.639, 3.48, 4.12, 3.3	11,320, 12,520	12,030	Cf	Fiscal year 1949.	
	Do.	do.	900	9.240, 3.47, 4.12, 3.3	11,410, 12,570	22,070	Cf	Fiscal year 1948.	

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent						Ultimate, percent						Caloric value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ³	Agglomerating index ⁴	Free-swelling index	Hardgrove grindability index	Date
						As-received coal			Volatiles			Fixed carbon			Dry coal			Hydrogen								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
KENTUCKY—Continued																										
West—Continued																										
UNION COUNTY																										
Sturgis:	No. 9	Hvab	3-inch lump.	165 T	3.0	39.0	51.2	9.8	3.8	5.1	73.6	1.6	6.1	13,090	13,430	1	2,000	1	Cf				Mar. 18, 1949.			
Do.	do.	do.	1½-inch lump.	4,000 D	2.0	38.2	51.6	10.2	3.6					12,940	13,330	5			Cf				Fiscal year 1949.			
Do.	do.	do.	do.	3,600 D	2.8	38.5	50.9	10.8	3.8					12,840	13,210	7			Cf (6), Cf (1)				Fiscal year 1948.			
Do.	do.	do.	do.	6,400 D	2.5	38.2	50.4	11.4	3.8					12,810	13,100	4	2,050	1	Cf				Fiscal year 1949.			
Do.	do.	do.	1¼- by 6-inch.	800 D	2.5	38.7	51.0	10.3	3.6					12,910	13,280	8			Cf				Fiscal year 1948.			
Do.	do.	do.	do.	800 D	2.7	37.9	53.5	8.7	3.2					13,120	13,430	1			Cf				Fiscal year 1949.			
Do.	do.	do.	do.	3,000 D	2.3	38.3	53.0	8.7	3.4					12,880	13,430	4			Cf				Fiscal year 1950.			
Do.	do.	do.	1¼- by 3-inch.	165 T	3.2	37.6	50.7	11.7	4.4					12,670	13,090	1	2,000	1	Cf				Mar. 18, 1949.			
Do.	do.	do.	do.	3,922 D	3.2	38.3	51.3	10.4	3.6					12,860	13,280	14			Cg (1), Cf (13)				Fiscal year 1948.			
Do.	do.	do.	do.	180 D	2.4	38.2	50.9	11.9	3.8					12,860	13,280	1	1,970	1	Cf				Fiscal year 1949.			
Do.	do.	do.	0 by 1¼-inch.	364 T	4.7	36.4	50.9	12.7	4.5					12,270	12,870	1	2,000	2	Cf				Mar. 18, 1949.			
Do.	do.	do.	do.	1,163 D	6.6	35.7	50.1	14.2	4.5					11,880	12,720	2			Cf				Fiscal year 1950.			
WEBSTER COUNTY																										
Providence:																										
Dry In. (Low Moisture):																										
Do.	do.	Hvab	6-inch lump.	50 T	3.4	40.3	49.6	10.1	3.4					12,880	13,280	1	2,030	1	Cf				May 2, 1949.			
Do.	do.	do.	3- by 6-inch.	100 T	3.6	40.5	49.6	9.9	3.9	5.1	72.7	1.5	6.9	12,810	13,290	1	2,020	1	Cf				Do.			
Do.	do.	do.	1¼- by 6-inch.	240 D	3.6	38.9	47.5	13.6	4.2					12,180	12,630	4			Cf				Fiscal year 1948.			
Do.	do.	Hvab	1¼- by 3-inch.	208 T	3.8	39.6	49.5	10.9	4.0					12,570	13,070	1	1,940	1	Cf				May 2, 1949.			
Do.	do.	do.	do.	211 D	4.0	39.5	48.6	11.9	4.1					12,380	12,900	4			Cf				Fiscal year 1950.			
Do.	do.	do.	do.	157 D	3.8	39.9	54.9	0.1	5.4	4.3				12,460	12,950	3			Cf				Fiscal year 1948.			
Do.	do.	do.	0 by 1¼-inch.	330 T	4.3	37.5	48.0	14.5	4.7					11,870	12,410	1	1,970	1	Cf				May 2, 1949.			
Do.	do.	do.	do.	166 D	10.7	35.8	53.1	13.1	3.6					11,210	12,550	2	2,110	1	Cf				Fiscal year 1948.			
Do.	do.	do.	do.	617 D	4.5	37.1	48.6	14.3	5.3					11,930	12,490	1	1,990	1	Cf				Fiscal year 1949.			
Do.	do.	do.	do.	25 D	4.2	37.6	49.7	12.7	4.0					12,130	12,660	3			Cf				Fiscal year 1950.			
Do.	do.	Hvab	6-inch lump.	100 T	3.4	40.2	50.3	9.5	3.2					12,960	13,400	1	2,040	1	Cf				Do.			
Do.	do.	Hvab	1¼- by 6-inch.	25 T	3.7	39.9	50.8	9.4	3.6					12,870	13,370	1	2,050	1	Cf				Do.			
Do.	do.	do.	do.	100 T	3.4	38.2	49.6	12.2	3.5					12,490	12,880	3			Cf				Fiscal year 1948.			
Do.	do.	do.	1¼- by 3-inch.	706 D	4.2	38.6	48.8	12.6	3.9					12,340	12,800	5			Cg (1), Cf (3)				Do.			
Do.	do.	do.	do.	2,205 D	3.9	38.9	49.7	11.4	4.0					12,590	13,100	4	2,040	2	Cf				Fiscal year 1949.			
Do.	do.	do.	do.	1,033 D	4.7	39.1	48.9	12.0	4.7					12,320	12,830	7			Cf				Fiscal year 1950.			
Do.	do.	do.	0 by 2-inch.	4, 816 D	5.0	36.7	47.8	15.5	4.1					11,660	12,270	1	2,000	1	Cf				Fiscal year 1948.			
Do.	do.	do.	0 by 1¼-inch.	120 T	4.4	36.6	48.5	14.7	4.0					11,960	12,510	1	2,000	1	Cf				Apr. 28, 1950.			
Do.	do.	do.	do.	2,103 D	4.0	35.6	46.6	17.5	4.7					11,530	12,170	6	2,030	1	Cf (8), Cf (1)				Fiscal year 1948.			
Do.	do.	do.	do.	3,865 D	4.4	36.1	47.4	16.5	4.4					11,630	12,170	6	2,000	1	Cg (1), Cf (5)				Fiscal year 1949.			
Do.	do.	do.	6-inch lump.	80 T	4.2	40.1	50.6	9.3	4.5	5.0	73.1	1.5	6.6	12,680	13,240	1	2,000	1	Cf				Do.			
Do.	do.	do.	2- by 6-inch.	150 T	4.6	38.4	50.7	10.9	4.7					12,380	12,970	1	2,000	1	Cf				Fiscal year 1949.			
Do.	do.	do.	1¼- by 6-inch.	600 D	5.0	38.0	49.1	12.9	5.6					11,930	12,560	3			Cf				Fiscal year 1950.			
Do.	do.	do.	1¼- by 3-inch.	634 D	4.5	38.7	49.9	11.4	4.2					12,410	12,990	2			Cf				Fiscal year 1948.			
Do.	do.	do.	¾- by 2-inch.	100 T	5.3	37.1	47.2	15.7	4.7					11,660	12,310	1	1,230	1	Cf				Do.			
Do.	do.	do.	0 by 1¼-inch.	1,035 D	3.8	36.3	46.9	14.1	4.6					11,940	12,420	1			Cf				Mar. 1, 1949.			
Do.	do.	do.	0 by ¾-inch.	3,099 D	6.8	35.4	49.1	15.5	4.1					11,330	12,160	5			Cf				Fiscal year 1950.			
Do.	do.	do.	0 by ½-inch.	1,615 D	5.8	36.5	49.9	13.2	4.4					11,860	12,590	3			Cf				Fiscal year 1949.			
Do.	do.	do.	0 by ¾-inch.	1, 50 T	8.8	32.2	47.2	20.3	5.2					10,480	11,490	1	2,130	1	Cf				Do.			
Do.	do.	do.	do.																Cf				Mar. 1, 1949.			

MARYLAND

ALLEGANY COUNTY	Pittsburgh	Lvb	Run-of-mine	T	3.4 18.4 70.6 11.0	1.0	4.2 78.5	1.9	2.4 13.360 13.830	1.2 910+	1	Cg	8	May 27, 1948.
Barton: Swanton	Pittsburgh	Lvb	Run-of-mine	120	3.4 18.4 70.6 11.0	1.0	4.2 78.5	1.9	2.4 13.360 13.830	1.2 910+	1	Cg	8	May 27, 1948.
Ekhardt: (strip)	do	Lvb	do	100	2.3 18.2 70.5 11.3	.9	4.3 78.2	1.9	2.4 13.540 13.860	1.2 910+	1	Cg	9+	May 26, 1948.
Ekhardt: No. 4	do	Lvb	do	200	3.4 17.6 68.3 14.1	1.2	4.1 76.5	1.8	2.3 12.860 13.320	1.2 910+	1	Cg	9	Do.
(slope)	Sewickley	Lvb	do	200	2.4 19.9 68.8 11.3	1.2	4.3 79.4	1.7	2.1 13.550 13.880	1.2 910	1	Cg	9+	Do.
Ekhardt: No. 10	Pittsburgh	Lvb	do	100	3.5 18.2 70.7 11.1	1.0	4.3 78.7	1.9	2.0 13.350 13.830	1.2 910	1	Cg	9+	May 27, 1948.
Middleham: McNitt No. 2	do	do	do	100	3.5 18.2 70.7 11.1	1.0	4.3 78.7	1.9	2.0 13.350 13.830	1.2 910	1	Cg	9+	May 27, 1948.
Morrison: Eico No. 1	Bakerstown and Tyson	0 by 2-inch	0 by 2-inch	118	5.8 18.0 68.0 14.0	2.7	-----	-----	12.110 12.850	1.2 370	1	Cp	-----	Fiscal year 1949.
Eico No. 3	do	2-inch lump	2-inch lump	124	3.6 16.3 64.2 19.5	1.3	-----	-----	11.860 12.300	1.2 810	1	Cp	-----	Fiscal year 1948.
Do	do	0 by 2 1/2-inch	0 by 2 1/2-inch	186	5.1 17.2 66.1 16.7	1.7	-----	-----	11.980 12.620	2.2 630	2	Cf (1), Cp (1)	-----	Do.
Do	do	do	do	354	3.2 17.8 65.0 17.2	2.5	-----	-----	12.100 12.590	2.2 460	2	Cp	-----	Fiscal year 1949.
GARRETT COUNTY														
Jennings: Allegheny No. 1	Bakerstown	Lvb	4-inch lump	30	2.3 20.1 67.3 12.6	3.2	4.3 76.3	1.4	2.2 13.220 13.530	1.2 070	1	Cg	-----	Aug. 10, 1948.
Do	do	3- by 7-inch	3- by 7-inch	36	1.6 20.4 64.9 14.7	3.2	-----	-----	12.950 13.160	2	-----	Cg	-----	Fiscal year 1948.
Do	do	1 1/2- by 4-inch	1 1/2- by 4-inch	40	2.2 20.5 66.8 12.7	3.0	-----	-----	13.230 13.510	1.2 030	1	Cg	-----	Aug. 10, 1948.
Do	do	1 1/2- by 3-inch	1 1/2- by 3-inch	45	1.4 19.5 65.0 15.5	3.3	-----	-----	12.830 13.020	1.2 150	1	Cg	-----	Fiscal year 1948.
Do	do	0 by 1 1/2-inch	0 by 1 1/2-inch	45	3.8 20.4 65.4 14.2	3.4	-----	-----	12.770 13.270	1.1 970	1	Cg	9	Aug. 10, 1948.
Do	do	0 by 1 1/4-inch	0 by 1 1/4-inch	250	3.8 20.7 67.3 12.0	2.1	4.4 77.2	1.4	2.9 13.190 13.710	1.2 520	1	Cg	9+	Jan. 9, 1950.
Kempton: Kempton No. 42	Upper Freeport	Mvb	Run-of-mine	100	2.5 15.2 68.8 16.0	2.5	3.9 74.5	1.2	1.9 12.650 12.980	1.2 600	1	Cg	5 1/2	June 1, 1948.
Vindex: Kittanner: Hamill	Freeport	Lvb	do	578	2.7 20.0 66.6 13.4	2.3	-----	-----	13.040 13.400	11 2 550	10	Cg	-----	Fiscal year 1948.
Earl No. 2	Lower Kittanning	do	0 by 1 1/2-inch	236	1.7 16.8 70.6 12.6	2.1	-----	-----	13.350 13.580	4	-----	Cg	-----	Fiscal year 1950.
Manor No. 3	do	do	3/8- by 1 1/4-inch	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

MISSOURI

BATES COUNTY	Bever	3- by 7 1/2-inch (W)	T	9.2 33.5 49.8 16.7	2.8	-----	-----	-----	11.060 12.180 <th>1.2 050 <th>1</th> <th>Cf</th> <th>-----</th> <th>Nov. 4, 1949.</th> </th>	1.2 050 <th>1</th> <th>Cf</th> <th>-----</th> <th>Nov. 4, 1949.</th>	1	Cf	-----	Nov. 4, 1949.
Hume: Tiger No. 1	Bever	3- by 7 1/2-inch (W)	700	9.2 33.5 49.8 16.7	2.8	-----	-----	-----	11.060 12.180	1.2 050	1	Cf	-----	Nov. 4, 1949.
Do	do	do	408	6.5 35.0 47.9 17.1	2.8	-----	-----	-----	11.390 12.180	2	-----	Cf	-----	Fiscal year 1948.
Do	do	3- by 7-inch (W)	163	5.2 34.3 47.7 18.0	2.9	-----	-----	-----	11.370 11.990	1	-----	Cf	-----	Do.
Do	do	1 1/4- by 7-inch (W)	105	8.8 33.3 49.1 17.6	2.8	-----	-----	-----	11.040 12.110	1	-----	Cf	-----	Do.
Do	do	1 1/4- by 3-inch (W)	700	9.1 34.5 49.3 16.2	2.9	-----	-----	-----	11.200 12.320	1.2 050	1	Cg (1), Cf (1)	-----	Nov. 4, 1949.
Do	do	do	1,051	6.8 35.2 49.6 15.2	2.4	-----	-----	-----	11.760 12.480	2	-----	Cf	-----	Fiscal year 1948.
Do	do	do	556	6.2 34.5 49.9 16.0	2.7	-----	-----	-----	11.520 12.290	1	-----	Cf	-----	Fiscal year 1948.
Do	do	do	1,000	5.4 34.2 49.9 15.9	2.8	-----	-----	-----	11.640 12.310	1	-----	Cf	-----	Fiscal year 1950.
Do	do	3/8- by 1-inch (W)	93	10.5 32.9 51.3 15.8	3.1	-----	-----	-----	11.070 12.360	10 2 060	2	Cf	-----	Fiscal year 1948.
Do	do	do	3,199	7.6 35.3 50.9 13.8	2.6	-----	-----	-----	11.760 12.730	1.2 050	1	Cf	-----	Nov. 4, 1949.
Do	do	0 by 1 1/2-inch (W)	600	13.7 35.1 50.7 14.2	2.8	4.6 70.3	1.4	6.7 10.880 12.610	1.2 050	3	Cf	-----	Fiscal year 1948.	
Do	do	do	396	7.8 34.3 49.2 16.5	2.6	-----	-----	-----	11.340 12.300	3.2 170	3	Cf	-----	Fiscal year 1948.
Do	do	do	498	7.2 34.3 51.4 14.3	2.7	-----	-----	-----	11.650 12.550	1.2 100	1	Cf	-----	Fiscal year 1948.
CLAY COUNTY														
Mosby: Klondike	do	1 3/4- by 4-inch	10	14.1 41.1 45.5 13.4	5.1	4.76	6.6	1.4	8.8 10.440 12.150	1.1 920	1	Cf	-----	Nov. 15, 1949.
Do	do	1/2- by 1 1/2-inch	10	14.4 40.0 45.9 14.1	4.5	-----	-----	-----	10.360 12.100	1.2 000	1	Cf	-----	Do.
Do	do	0 by 3/4-inch	10	14.7 37.9 43.1 19.0	4.6	-----	-----	-----	9.460 11.080	1.1 940	1	Cf	68	Do.
HENRY COUNTY														
Clinton: Reliance	Tebo	Run-of-mine (crushed to 1 1/2-inch, W)	991	7.5 41.2 43.3 15.5	4.2	-----	-----	-----	11.270 12.180	8 1 970	2	Cf	-----	Fiscal year 1948.
Do	do	3- by 7-inch (W)	361	7.5 44.4 43.3 12.3	3.9	-----	-----	-----	11.600 12.640	4	-----	Cf	-----	Fiscal year 1949.
Do	do	3- by 6-inch (W)	110	9.8 40.7 42.0 17.3	4.5	-----	-----	-----	10.660 11.820	1.2 000	1	Cf	-----	Nov. 14, 1949.
Do	do	1 1/4- by 3-inch (W)	200	11.0 41.8 45.2 13.0	4.0	-----	-----	-----	11.180 12.560	1.2 000	1	Cf	-----	Do.

* Numbers in parentheses indicate the number of determinations made.

† See Explanation of Symbols (p. 5).
 * Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent						Ultimate, percent						Caloric value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-sofening temperatures ³	Agglomerating index ⁴	Free-swelling index	Hardgrove grindability	Date																							
						Moisture	Volatiles as-received coal	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis																																	
MISSOURI—Continued																																																	
HENRY COUNTY—continued	Clinton—Continued	Reliance	1 1/4- by 3-inch (W)	182	D	5.3	41.2	43.0	15.8	4.4	4.4	11.4	20.0	12.0	1.2	7.7	11.5	860	12,650	1	1,970	1	Cf	22	23	24	Fiscal year 1949.																						
																												Do	6.0	42.5	43.1	12.4	3.8	3.8	11.8	19.0	11,880	12,650	3	11,970	1	Cf	22	23	24	Fiscal year 1950.			
																												Do	13.0	43.1	43.0	11.9	3.9	4.9	70.4	1.2	7.7	11.5	10,410	12,810	1	11,970	1	Cf	22	23	24	Nov. 14, 1949.	
																												Do	16.6	41.6	43.0	13.4	3.9	3.9	10.4	10.4	10,410	12,810	1	11,970	1	Cf	5 1/2	71	Do.	22	23	24	Do.
																												Do	1.287	7.7	42.7	44.8	12.5	4.0	4.0	11.5	19.0	11,880	12,650	2	22,000	2	Cf	22	23	24	Fiscal year 1949.		
																												Do	1.350	9.9	42.5	43.5	12.0	3.8	3.8	11.4	20.0	11,420	12,680	2	22,000	2	Cf	22	23	24	Fiscal year 1950.		
																												Do	100	8.9	45.4	39.7	14.9	6.0	6.0	10.9	19.0	10,900	11,850	1	12,380	1	Cf	22	23	24	Nov. 7, 1949.		
																												Do	107	8.0	45.1	44.7	10.2	4.4	4.4	11.4	19.0	11,410	12,730	2	11,940	1	Cf	22	23	24	Fiscal year 1949.		
																												Do	200	11.4	45.9	45.6	8.5	4.6	5.2	72.2	1.3	8.2	11.6	13,150	11,940	1	11,940	1	Cf	22	23	24	Nov. 7, 1949.
																												Do	518	4.3	43.4	44.1	12.5	4.2	4.2	11.9	19.0	11,900	12,520	1	11,920	1	Cf	22	23	24	Fiscal year 1949.		
Do	638	7.3	44.6	46.2	9.2	4.7	4.7	12.0	13,050	12,000	2	11,920	1	Cf	22	23	24	Fiscal year 1950.																															
Do	175	14.9	45.2	45.6	9.2	4.1	4.1	11.8	13,140	11,800	1	11,920	1	Cf	22	23	24	Nov. 7, 1949.																															
Do	3,051	9.8	44.3	44.8	10.9	4.6	4.6	11.5	19.0	11,500	12,850	10	10,910	4	Cf	22	23	24	Fiscal year 1950.																														
BALLS COUNTY	Vandalia: Crockett.	0 by 2-inch	497	D	8.6	43.5	42.2	14.3	5.6	5.6	11.1	14.0	12,190	2	2,030	1	Cf	Do.	22	2,030	1	Cf	56	65	Do.	Fiscal year 1948.																							
																											Do	8.6	43.5	42.2	14.3	5.6	5.6	11.1	14.0	12,190	2,030	1	2,030	1	Cf	56	65	Do.					
RANDOLPH COUNTY	Huntsville:	Mark T.wain.	3- by 7-inch (W)	330	T	13.2	43.2	46.5	10.3	5.4	5.4	11.2	20.0	12,920	11,920	1	11,920	1	Cf	Nov. 18, 1949.																													
																					Do	120	13.6	44.3	46.5	9.2	4.7	5.1	71.7	1.3	8.0	11,360	13,140	1	12,030	1	Cf	Do.											
																					Do	119	10.0	43.6	47.7	8.7	4.3	4.3	11.7	13.0	11,750	13,060	3	12,030	1	Cf	Do.												
																					Do	127	8.9	42.1	48.2	9.7	4.7	4.7	11.6	12,780	11,640	12	12,030	1	Cf	Do.													
																					Do	2,334	9.9	43.2	47.1	9.7	4.3	4.3	11.6	12,890	11,610	12	12,030	1	Cf	Do.													
																					Do	300	15.1	43.6	47.2	9.2	4.5	4.5	11.4	14,120	11,400	12	12,030	1	Cf	Do.													
																					Do	280	11.4	42.6	45.8	11.6	4.9	4.9	11.5	15,010	11,500	2	2,030	1	Cf	Do.													
																					Do	240	17.2	42.7	48.0	9.3	4.4	4.4	10.8	13,080	10,830	12	12,000	1	Cf	Do.													
																					Do	40	15.5	40.3	47.2	12.5	4.5	4.5	10.6	12,550	10,600	12	12,030	1	Cf	Do.													
																					Do	1,629	3.8	43.7	43.7	12.6	5.2	5.2	12.4	12,890	12,400	6	12,400	1	Cf	Do.													
VERNON COUNTY	Walker:	Pioneer No. 3	1 1/4- by 3-inch (W)	117	D	4.6	40.2	46.2	13.6	5.0	5.0	12.4	12,720	6	12,400	1	12,400	1	Cf	Fiscal year 1948.																													
																					Do	523	3.9	39.3	46.7	14.0	4.3	4.3	12.4	12,740	12,400	6	12,400	1	Cf	Do.													
																					Do	309	3.6	38.8	47.5	13.7	4.0	4.0	12.1	12,570	12,120	2	12,400	1	Cf	Do.													
																					Do	240	5.5	40.7	47.6	11.7	4.4	4.4	12.4	13,120	12,410	1	12,400	1	Cf	Do.													

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

County	Locality	Run-of-mine	5	T	48.3-46.5	43.0-10.5	1.7	4.5-63.9	.9-18.5	5, 660-10, 940	1, 2, 470	1	NAA	Date	
BOWMAN COUNTY	Bowman-Twin Buttes	Lig												Dec. 21, 1946.	
	BURKE COUNTY	Columbus:	Lig	120	T	36.1	40.6	50.6	8.8	6	4.4	66.4	1.0	18.8	7, 180-11, 230
		Kincaid	Lig	500	T	35.7	42.2	48.7	9.1	6					7, 210-11, 220
		Do.	Lig	900	T	34.4	40.1	47.2	12.7	7					7, 070-10, 780
BURLEIGH COUNTY	Do.	Lig	170	T	34.4	38.1	43.1	16.8	6					6, 740-10, 270	
	Do.	Lig													
Wilton:	Backman	Lig	5	T	40.1	45.8	45.8	8.4	1.0	4.5	65.6	9.19	6.6	6, 660-11, 110	
	Eckland	Lig	8	T	39.9	44.7	43.2	12.1	1.3	4.4	63.6	1.0	17.6	6, 480-10, 790	
DIVIDE COUNTY	Noonan:	Lig	500	T	34.3	41.6	50.5	7.9	6	4.4	66.8	1.2	19.1	7, 430-11, 300	
	Baukol-Noonan	Lig	140	T	35.4	42.1	48.1	6.8	7					7, 180-11, 120	
	Do.	Lig	225	T	35.5	41.2	46.8	12.0	1.0					7, 040-10, 920	
	Do.	Lig													
M'LEAN COUNTY	Garrison:	Lig	500	T	39.5	43.9	48.2	7.9	6	4.5	66.6	1.1	20.8	6, 700-11, 060	
	Custer	Lig	50	T	39.5	45.1	48.6	6.3	6					6, 810-11, 250	
	Do.	Lig													
	Do.	Lig													
Underwood:	4-inch lump	Lig	15	T	41.0	45.3	46.7	8.0	8	4.5	65.6	1.0	20.1	6, 610-11, 200	
	1½-by 4-inch	Lig	10	T	40.2	45.0	45.3	9.7	8					6, 600-11, 240	
	Do.	Lig	5	T	39.9	44.6	44.3	11.1	9					6, 570-10, 920	
	Do.	Lig	5	T	40.1	43.0	42.2	14.8	9					6, 210-10, 380	
	Do.	Lig													
MERCER COUNTY	Hazen:	Lig	50	T	37.7	44.0	48.9	7.1	8	4.5	66.3	9.20	4	6, 980-11, 210	
	Dakota Star	Lig	50	T	37.4	41.9	48.4	9.7	1.1					6, 950-11, 100	
	Do.	Lig	400	T	37.3	43.3	47.4	9.3	7					6, 970-11, 120	
	Do.	Lig													
Zap:	Indian Head	Lig	350	T	35.9	42.6	47.8	9.6	1.2	4.3	65.9	9.18	1.1	7, 140-11, 130	
	Do.	Lig	80	T	35.6	42.4	47.3	10.3	1.0					7, 120-11, 060	
	Do.	Lig	200	T	35.9	41.2	47.6	11.2	1.0					7, 000-10, 920	
	Do.	Lig													
MORTON COUNTY	Glen Ullin:	Lig	20	T	42.1	43.6	45.8	10.6	1.8	4.4	64.4	1.1	17.7	6, 300-10, 880	
	Richter	Lig	5	T	40.4	41.0	39.6	19.4	1.8					5, 840-9, 800	
	Do.	Lig	1	T	41.0	35.6	32.7	31.7	1.3					4, 720-7, 990	
	Do.	Lig													
MOUNT RAIL COUNTY	White Earth: Timmel	Lig	25	T	43.1	42.0	51.6	6.4	4	4.4	66.9	1.2	20.7	6, 430-11, 310	
		Lig													
WARD COUNTY	Minot:	Lig	100	T	39.0	42.8	50.2	7.0	3	4.4	66.2	1.0	21.1	6, 780-11, 120	
	Quality Lignite	Lig	25	T	38.2	40.5	49.4	10.1	3					6, 560-10, 620	
	Do.	Lig	20	T	38.3	40.8	48.5	10.7	2					6, 500-10, 530	
	Do.	Lig	25	T	38.6	39.4	47.3	13.3	4					6, 270-10, 210	
Sawyer:	Miller (strip)	Lig	100	T	39.0	42.3	51.0	6.7	3	4.4	67.2	9.20	5	6, 880-11, 280	
	Do.	Lig	60	T	38.7	41.5	49.5	9.0	4					6, 780-11, 050	
	Do.	Lig	60	T	38.9	41.7	48.0	10.3	4					6, 650-10, 890	
	Do.	Lig	50	T	40.3	39.4	46.9	13.7	4					6, 190-10, 370	
Do.	Lig	50	T	40.8	38.5	46.6	14.6	4					6, 020-10, 170		

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.
 3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Upper Freeport (No. 7)	Run-of-mine (crushed to 2 1/2-inch)	5,137 D	9,738, 2,422, 319, 5, 3.0	10,140, 11, 230	7,2, 430	6	Cf (1), Cp (6)	Fiscal Year 1948
Foodwood: Glen Ebon	do	Hvbb	30	6,644, 5,49, 5, 6.0	9,012, 590, 13, 480	1,2,000	1	Cf	May 1, 1950
	do	Hvbb	110	7,943, 6,47, 0, 9.4	11,920, 12, 940	11,900	1	Cf	Do.
	do	Hvbb	200	8,340, 1,53, 3, 6.6	12,310, 13, 430	12,870	1	Cf	Apr. 5, 1950
	do	Hvbb	400	8,630, 8,51, 0, 9.2	11,880, 13, 070	12,660	1	Cf	Do.
Glouster: Buckeye Gem	do	Hvbb	100	11,338, 7,52, 0, 8.0	11,510, 12, 910	12,650	1	Cf	Do.
	do	Hvbb	798	6,888, 8,52, 2, 0.0	12,140, 13, 030	12,650	1	Cp	Fiscal year 1948
	do	Hvbb	1,311	9,938, 5,51, 1, 13.6	11,060, 12, 280	12,520	1	Cp	Apr. 5, 1950
	do	Hvbb	200	9,938, 5,51, 1, 13.6	11,060, 12, 280	12,520	1	Cf	Do.
Millfield: Drydock No 255	do	Hvbb	50	8,541, 6,52, 9, 5.5	10,212, 500, 13, 650	12,500	1	Cf	Apr. 13, 1950
	do	Hvbb	100	8,542, 6,50, 8, 6.0	12,280, 13, 420	12,520	1	Cf	Do.
	do	Hvbb	30	9,141, 6,50, 7, 7.3	12,090, 13, 300	12,500	1	Cf	Do.
	do	Hvbb	200	9,939, 1,51, 6, 9.3	11,810, 13, 110	12,570	1	Cf	Do.
Nelsonville: Kimberly	do	Hvbb	600	8,144, 1,45, 8, 10.1	8,811, 7, 70, 12, 810	12,050	1	Cf	Apr. 14, 1950
	do	Hvbb	600	8,144, 1,45, 8, 10.1	8,811, 7, 70, 12, 810	12,050	1	Cf	53
BELMONT COUNTY									
Bellaire: Carnegie	do	Hvab	40	3,142, 5,49, 6, 7.9	13,150, 13, 570	12,130	1	Cf	June 14, 1950
	do	Hvab	120	3,141, 8,48, 4, 9.8	12,870, 13, 280	12,150	1	Cf	Do.
	do	Hvab	40	3,740, 2,48, 1, 11.7	12,460, 12, 600	12,500	1	Cf	Do.
	do	Hvab	798	3,341, 1,49, 4, 9.5	12,800, 13, 290	15,210	9	Cf (13), Cp (2)	Fiscal year 1949
Fairpoint: Bradford No. 1	do	Hvab	100	4,940, 2,47, 8, 12.0	12,280, 12, 920	12,070	1	Cf	June 14, 1950
	do	Hvab	450	4,638, 2,49, 5, 12.3	7,912, 240, 12, 840	12,470	1	Cf	June 28, 1950
	do	Hvab	7,465	5,936, 7,48, 8, 14.5	11,610, 12, 340	21,240	3	Cf (17), Cp (4)	Fiscal year 1948
	do	Hvab	4,621	5,438, 3,48, 4, 13.3	12,160, 12, 600	7	3	Cf	Fiscal year 1950
Flushing: Terra No. 1	do	Hvab	1,249	3,539, 3,47, 3, 13.4	11,830, 12, 510	9,230	3	Cf (8), Cp (1)	Do.
	do	Hvab	4,621	5,438, 3,48, 4, 13.3	12,160, 12, 600	7	3	Cf	Do.
	do	Hvab	120	2,543, 8,49, 2, 7.0	13,400, 13, 750	12,030	1	Cf	June 23, 1950
	do	Hvab	212	2,439, 3,46, 6, 14.1	12,240, 12, 340	4	1	Cf	Fiscal year 1949
Martins Ferry: Florence	do	Hvab	310	2,642, 1,47, 8, 10.1	12,920, 13, 270	12,150	1	Cf	June 23, 1950
	do	Hvab	120	2,941, 2,48, 0, 10.8	12,690, 13, 060	12,130	1	Cf	Do.
	do	Hvab	310	3,941, 2,47, 7, 11.1	12,520, 13, 030	12,050	1	Cf	Do.
	do	Hvab	12	2,742, 2,49, 5, 8.3	5,274, 6, 1, 4	12,030	1	Cf	June 27, 1950
Nixon: Do.	do	Hvab	50	3,041, 1,49, 5, 9.4	12,960, 13, 360	12,080	1	Cf	Do.
	do	Hvab	10	3,641, 7,48, 4, 9.9	12,780, 13, 270	12,030	1	Cf	Do.
	do	Hvab	10	3,941, 8,49, 3, 8.9	12,870, 13, 400	12,100	1	Cf	Do.
	do	Hvab	20	5,540, 9,49, 5, 9.6	12,550, 13, 280	12,100	1	Cf	Do.
Neefs: Willow Grove No. 10	do	Hvab	50	2,542, 4,49, 2, 8.4	13,140, 13, 480	12,050	1	Cf	June 21, 1950
	do	Hvab	450	2,942, 5,48, 8, 8.7	13,030, 13, 420	12,030	1	Cf	Do.
	do	Hvab	100	3,342, 3,49, 1, 8.6	13,060, 13, 500	1	Cp	Fiscal year 1948	
	do	Hvab	600	5,242, 6,49, 7, 7.7	12,890, 13, 600	12,050	1	Cf	June 21, 1950
Powhatan Point: Powhatan Nos. 1 and 2	do	Hvab	120	2,743, 1,47, 3, 9.6	12,950, 13, 310	12,080	1	Cf	June 12, 1950
	do	Hvab	240	3,243, 1,48, 4, 8.5	13,110, 13, 540	12,080	1	Cf	Do.
	do	Hvab	310	5,442, 8,48, 8, 8.4	12,740, 13, 460	12,030	1	Cf	Do.
	do	Hvab	330	5,339, 8,46, 5, 13.7	11,940, 12, 610	12,150	1	Cf	Do.
CARROLL COUNTY									
Malvern: Thoma	do	Hvab	500	7,736, 9,45, 6, 17.5	10,920, 11, 830	2		Cf	Fiscal year 1948
	do	Hvab	1,500	6,236, 0,43, 9, 20.1	10,640, 11, 340	3		Cf	Fiscal year 1949
COSHOCK COUNTY	Blissfield: Bernhardt	do	845	15,238, 6,54, 3, 7.1	10,720, 12, 640	13		{ Cf (5), N Aa (4), N Ab (4) }	Fiscal year 1948
		do	845	15,238, 6,54, 3, 7.1	10,720, 12, 640	13		{ Cf (5), N Aa (4), N Ab (4) }	Fiscal year 1948

3 Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent							Ultimate, percent				Calorific value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ²	Agglomerating index ^{1,3}	Free-swelling index	Hardgrove grindability index	Date
						Moisture as-received coal			Dry coal				Dry coal				B. t. u., as-received basis	B. t. u., dry basis							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
OHIO—Continued																									
GALLIA COUNTY																									
Cheshire:	Redstone (No. 8A)	Hvbb	6-inch lump.	130	T	6.4	45.8	47.5	6.7	2.7					12,410	13,260	12,440	1		Cf			May 4, 1950.		
Do.	do.	Hvbb	2 1/2 by 6-inch (W)	100	T	6.7	44.6	47.0	7.5	2.7					12,260	13,140	12,300	1		Cf			Do.		
Do.	do.	Hvbb	1 1/2 by 6-inch (W)	455	T	7.4	44.2	45.9	10.2	2.8					11,950	12,510	12,330	1		Cf	4 1/2		Do.		
Do.	do.		0 by 2 1/2-inch (W)	50	D	8.1	44.1	45.7	10.2	3.1					11,770	12,720	12,360	1		Cf	52		Do.		
Do.	do.		0 by 1 1/2-inch	360	D	8.1	42.7	44.4	9.9	3.7					11,790	12,830		4		Cf (3)			Fiscal year 1950.		
Do.	do.		Run-of-mine	110	T	8.1	40.4	45.6	11.4	3.4					10,950	12,180	12,450	1		Cf (3), Cp (1)	5		Do.		
Do.	Pittsburgh (No. 8)	Hvbb	Run-of-mine (crushed to 2-inch).	110	T	8.7	41.4	47.9	10.7	2.3	4.9	71.0	1.3	9.8	11,600	12,710	12,450	1		Cf			May 5, 1950.		
GUERNSEY COUNTY																									
Byesville:	Upper Freeport (No. 7)		2 by 5-inch.	227	D	5.0	39.6	50.9	9.5	3.2					12,360	13,010		2		Cf			Fiscal year 1950.		
Do.	do.		1 1/2 by 4-inch.	587	D	5.3	38.6	50.8	10.6	2.8					12,300	12,990		9		Cf			Fiscal year 1948.		
Do.	do.		1 by 6-inch.	794	D	5.1	38.0	51.7	10.3	2.7					12,380	13,050		4		Cf			Fiscal year 1950.		
Do.	do.		1 by 4-inch.	4,532	D	5.2	39.2	50.9	9.9	3.0					12,440	13,120		17		Cf			Do.		
Do.	do.		1 by 4-inch.	3,305	D	5.2	36.8	50.2	13.0	3.7					11,960	12,620		2		Cf			Do.		
Do.	do.		1 by 3-inch.	2,487	D	4.7	39.0	51.1	9.9	3.0					12,480	13,100		19		Cf			Do.		
Do.	do.		3/4 by 1 1/2-inch.	293	D	4.5	35.7	50.6	13.7	3.4					11,860	12,420		1		Cf			Do.		
Do.	do.		3/8 by 1 1/2-inch (OT)	5,949	D	6.5	37.6	53.2	9.2	1.7					12,220	13,070		15		Cf (9), Cp (5), Af (1)			Fiscal year 1949.		
Do.	do.		1/4 by 1 1/2-inch.	2,695	D	7.2	37.8	50.8	11.4	2.6					11,780	12,690		9		Cf (13), Cp (7)			Fiscal year 1950.		
Do.	do.		3/4 by 1-inch.	2,691	D	7.1	37.7	52.2	10.1	2.2					12,100	13,030		22		Cf (23), Cp (1)			Fiscal year 1948.		
Do.	do.		1/4 by 3/4-inch.	6,837	D	6.7	38.3	50.5	11.2	2.9					11,970	12,830		34		Cf (28), Cp (5)			Do.		
Do.	do.		0 by 1 1/2-inch.	10,872	D	9.4	34.9	50.9	14.2	2.4					10,990	12,130		26		Cp (9), Cf (7)			Do.		
Do.	do.		0 by 1 1/4-inch.	1,784	D	7.2	35.9	51.5	12.6	2.8					11,690	12,900		10		Af (6), NAb (4)			Fiscal year 1948.		
Do.	do.		0 by 3/4-inch.	2,944	D	8.0	37.8	45.5	16.7	4.2					10,830	11,770		8		Cf (11), Cp (1)			Fiscal year 1950.		
Walbonding	do.		do.	165	D	5.8	39.8	44.8	15.4	4.8					11,440	12,150		1		Cf (7), Cp (1)			Do.		
Walnut Hill.	do.		Run-of-mine (crushed to 2 1/2-inch).	1,331	D	11.9	34.7	52.4	12.9	3.2					11,110	12,610		25		Cf (24), Cp (1)			Fiscal year 1949.		
HARRISON COUNTY																									
Oadiz:	Pittsburgh (No. 8)	Hvab	Run-of-mine (crushed to 2-inch).	1,000	T	4.5	41.0	48.1	10.9	3.8	5.0	71.8	1.3	7.2	12,450	13,030	12,080	1		Cf	6 1/2		June 24, 1950.		
Dale No. 1.	do.		do.	1,770	D	5.8	36.4	44.8	15.0	3.1					11,560	12,270		9		Cf (7), Cp (2)			Fiscal year 1949.		
Dale No. 2.	do.		Run-of-mine (crushed to 1-inch).	3,044	D	9.0	37.3	49.9	12.8	2.2					11,260	12,370		14		Cp (7), Cf (6), Af (1)			Fiscal year 1950.		
Do.	do.		0 by 2-inch.	8,122	D	7.9	37.7	49.0	13.3	2.7					11,410	12,390		14		Cp (4), Cf (8), Af (2)			Do.		
Do.	do.		5-inch lump.	150	T	3.2	41.5	51.7	6.8	3.2					13,430	13,870	12,080	1		Cf			June 15, 1950.		
Nelms.	Middle Kittanning (No. 6)	Hvab	4-inch lump.	75	D	2.7	39.8	54.3	5.9	2.2					13,630	14,010		2		Cf			Fiscal year 1950.		
Do.	do.		2 by 5-inch (W)	200	T	3.4	41.3	50.4	8.3	3.1					13,160	13,620		1		Cf			Fiscal year 1950.		
Do.	do.		2 by 4-inch.	228	D	3.0	39.1	53.4	7.5	2.5					13,330	13,740		4		Cf			Fiscal year 1949.		
Do.	do.		1 1/2 by 4-inch.	306	D	2.8	39.0	53.3	7.7	2.6					13,340	13,720		6		Cf			Fiscal year 1948.		
Do.	do.		1 1/4 by 4-inch.	208	D	3.5	39.0	52.8	8.2	2.6					13,160	13,640		2		Cf			Fiscal year 1948.		
Do.	do.		1 1/4 by 3-inch.	212	D	3.0	38.8	52.3	8.0	2.6					13,230	13,640		4		Cf			Do.		

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample Description	Weight (T)	Moisture (%)	Volatiles (%)	Fixed Carbon (%)	Calorific Value (Btu)	Analysis Date	Notes
Do.	1- by 2-inch (W)	100	4.1	40.9	51.7	7.4	3.0	13,120
	3/4- by 1 1/4-inch	D	3.9	38.7	53.2	8.1	2.3	13,130
	do	219	3.0	38.1	53.3	8.6	2.6	13,150
	do	100	4.6	40.4	51.1	8.5	3.2	12,900
Do.	1- by 1-inch (W)	140	6.3	37.4	51.8	10.8	3.5	12,230
	0 by 3/4-inch	T	5.5	38.9	51.6	9.5	1.9	12,450
	Run-of-mine	1,000	6.6	37.7	47.6	13.7	3.2	11,170
	Run-of-mine (crushed to 2-inch)	332	9.0	38.7	47.6	13.7	3.2	11,170
Short Creek: Bradford No. 2	Run-of-mine	1,000	4.9	38.3	48.5	13.2	3.1	12,630
	Run-of-mine	1,000	4.9	38.3	48.5	13.2	3.1	12,630
HOCKING COUNTY								
Logan: Tracy	Run-of-mine (crushed to 1 1/4-inch)	190	6.6	44.5	44.9	10.6	3.6	11,910
	1/4- by 1 1/4-inch	50	6.6	45.2	47.3	7.5	3.1	12,400
Do.								
JACKSON COUNTY								
Wellston: Collins and Walton	0 by 1-inch	4,787	11.5	39.7	45.6	14.7	3.2	10,350
	Upper Freeport (No. 7)							
JEFFERSON COUNTY								
Dungen: Dunn Glen No. 11	5-inch lump	182	3.4	41.5	50.2	8.3	3.7	13,030
	2- by 5-inch (W)	424	4.0	41.6	50.4	8.0	3.1	13,020
	1- by 5-inch	1,712	3.8	40.8	51.0	8.2	3.1	13,010
	1 1/4- by 2-inch (W)	104	4.6	40.5	51.2	8.3	2.7	12,850
	3/4- by 1 1/4-inch (W)	226	4.9	40.6	51.4	8.0	2.9	12,840
	0 by 3/4-inch (3/4- by 1/4-inch W)	548	7.5	36.7	47.6	15.7	3.5	11,280
	5-inch lump	70	4.1	40.8	53.9	5.3	2.0	13,440
	1 1/4- by 5-inch (W)	520	4.4	39.5	53.5	7.0	2.0	13,080
	3/4- by 1 1/4-inch (W)	310	4.6	38.9	54.2	6.9	1.9	13,230
	0 by 3/4-inch (W)	270	5.0	36.9	54.2	7.3	2.1	12,700
Smithfield: Dean	0 by 1 1/4-inch	870	12.6	35.4	49.7	14.9	2.4	10,530
	Run-of-mine	100	3.0	38.3	50.3	11.4	2.8	12,710
Staubenville: Castner								
Rayland: Dorothy	5-inch lump	50	3.1	42.6	49.1	8.3	4.5	13,090
	3- by 5-inch (W)	120	3.5	41.2	49.2	8.6	3.8	12,870
	2- by 4-inch	122	3.9	41.9	49.5	8.3	4.4	13,110
	1 1/2- by 4-inch	277	2.8	40.2	49.5	10.3	3.4	12,880
	1 1/4- by 4-inch	213	2.9	41.7	49.2	9.1	4.1	13,070
	1 1/4- by 3-inch (W)	125	3.9	41.7	49.5	8.5	3.5	13,000
	1 1/4- by 3-inch	206	3.4	41.5	48.8	9.7	3.7	12,950
	3/4- by 1 1/4-inch	240	4.2	41.2	50.3	8.5	3.2	12,800
	0 by 2-inch	1,363	7.5	33.9	48.3	11.8	3.4	11,800
	0 by 1 1/4-inch (3/4- by 1 1/4-inch W)	415	5.9	38.3	46.1	15.6	3.4	11,660
LAWRENCE COUNTY								
Blackfork: Collins Nos. 1 and 2	Run-of-mine	2,717	6.3	38.1	40.2	21.7	4.3	10,330
	2- by 5-inch	776	7.1	39.1	43.0	17.9	4.2	10,740
Greasy Ridge: Greasy Ridge	do	654	7.6	40.8	45.7	13.5	3.5	11,360
	do	878	7.4	43.8	43.4	12.8	6.2	11,270
	0 by 3/4-inch	3,255	10.1	41.7	42.8	13.5	5.3	10,470
	do	2,037	10.5	41.1	43.2	15.7	5.0	10,390
MEIGS COUNTY								
East Pomeroy: Charter Oak	Run-of-mine (crushed to 5-inch)	500	7.5	43.0	46.5	10.5	5.3	11,700
	do							12,650

3 Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tippie and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent										Calorific value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ²	Agglomerating index ¹¹	Free-swelling index	Hardgrove grindability index	Date
						Dry coal					As-received coal					B. t. u., as-received basis	B. t. u., dry basis							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
OHIO—Continued																								
MEIGS COUNTY—con.																								
Middleport: Groves.....	Pittsburgh (No. 8)	Hvbb	Run-of-mine (crushed to 2-inch).	500 T	8.2	42.7	46.5	10.8	3.3	5.0	69.6	1.3	10.0	11.5	70	12,000	12,030	1	CI	---	---	---	Apr. 19, 1950.	
Swisher.....	do.....	Hvcb	do.....	500 T	9.1	41.5	48.3	10.2	3.0	5.0	70.3	1.4	10.1	11.5	500	12,650	12,050	1	CI	3½	---	---	Apr. 19-20, 1950.	
Pomeroy, Fleming and Jobb No. 1.	Pittsburgh and Redstone (Nos. 8 and 8A).	Hvcb	0 by 1½-inch.	128 D	8.3	41.9	43.3	14.8	5.8	---	---	---	---	---	10,960	11,950	2	CI	---	---	---	Fiscal year 1949.		
Rutland: Jacobs.....	Pittsburgh (No. 8).	Hvbb	Run-of-mine (crushed to 2-inch).	70 T	6.5	42.1	46.3	11.6	3.5	5.0	69.4	1.2	9.3	11.1	780	12,600	12,100	1	CI	4½	---	---	Apr. 21, 1950.	
Koontz.....	do.....	Hvbb	do.....	300 T	5.7	42.1	44.0	13.9	5.3	4.9	66.6	1.0	8.3	11.1	550	12,240	12,100	1	CI	5½	51	---	Apr. 18, 1950.	
Do.....	do.....	Hvbb	0 by 1¼-inch.	328 D	7.8	40.1	45.3	14.6	3.6	---	---	---	---	---	11,110	12,050	5	CI (4), Cp (1)	---	---	---	Fiscal year 1950.		
MORGAN COUNTY																								
Crooksville: Singer and Byer.....	Middle Kittanning (No. 6).	Hvbb	Run-of-mine (crushed to 2-inch).	370 T	8.2	43.6	47.7	8.7	3.5	---	---	---	---	---	12,020	13,090	1	CI	4½	55	---	Apr. 12, 1950.		
MUSKINGUM COUNTY																								
Roseville: Rose Glow.....	do.....	Hvbb	5-inch lump.	25 T	7.0	47.0	47.8	5.2	3.1	---	---	---	---	---	12,600	13,610	1	CI	---	---	---	May 18, 1950.		
Do.....	do.....	Hvbb	3- by 5-inch.	876 D	6.3	44.7	47.1	8.2	4.0	---	---	---	---	---	12,360	13,190	3	CI	---	---	---	Fiscal year 1950.		
Do.....	do.....	Hvbb	2- by 5-inch.	110 T	6.7	43.7	46.0	10.3	3.8	---	---	---	---	---	12,010	12,870	1	CI	---	---	---	May 18, 1950.		
Do.....	do.....	Hvbb	0 by 2-inch.	140 T	7.2	40.4	42.8	16.8	5.2	---	---	---	---	---	10,930	11,780	1	CI	4½	53	---	Do.		
Ten-X.....	do.....	Hvbb	3-inch lump.	19 T	6.7	45.3	48.2	6.5	3.5	---	---	---	---	---	12,550	13,450	1	CI	---	---	---	Apr. 10, 1950.		
Do.....	do.....	Hvbb	2- by 3-inch.	70 T	6.6	43.4	47.3	9.3	4.1	---	---	---	---	---	12,160	13,020	1	CI	---	---	---	Do.		
Do.....	do.....	Hvbb	1- by 2-inch.	38 T	6.4	43.1	46.5	10.4	3.6	---	---	---	---	---	11,990	12,810	1	CI	---	---	---	Do.		
Do.....	do.....	Hvbb	½- by 1-inch.	22 T	6.7	40.3	44.5	15.2	3.9	---	---	---	---	---	11,290	12,100	1	CI	---	---	---	Do.		
Do.....	do.....	Hvbb	0 by 2½-inch.	1,128 D	10.7	38.2	47.4	14.4	2.5	---	---	---	---	---	10,900	12,210	1	CI (8), Cp (3)	---	---	---	Fiscal year 1950.		
Do.....	do.....	Hvbb	0 by ½-inch.	30 T	8.0	37.9	43.4	18.7	4.5	---	---	---	---	---	10,500	11,410	1	CI	3½	---	---	Apr. 10, 1950.		
Zanesville: Coughell.....	Upper Freeport (No. 7).	Hvbb	Run-of-mine (crushed to 1½-inch).	50 T	7.7	37.5	43.7	18.8	3.3	4.6	64.4	1.2	7.7	10,700	11,590	1	CI	4½	53	---	May 17, 1950.			
Do.....	do.....	Hvbb	0 by 1½-inch.	3,874 D	6.9	36.7	44.0	19.3	3.4	---	---	---	---	---	10,630	11,420	6	CI (5), Cp (1)	---	---	---	Fiscal year 1950.		
Gilbert.....	Middle Kittanning (No. 6).	Hvbb	Run-of-mine (crushed to 2-inch).	605 T	7.5	44.3	46.2	9.5	4.2	5.1	71.6	1.3	8.3	11,990	12,970	1	CI	5	52	---	May 8, 1950.			
PERRY COUNTY																								
Congo: Buckingham No. 219.....	do.....	Hvbb	5-inch lump.....	100 T	7.4	42.3	49.0	8.7	2.0	---	---	---	---	---	12,130	13,090	1	CI	---	---	---	Apr. 24, 1950.		
Do.....	do.....	Hvbb	1¼- by 5-inch.....	150 T	7.6	41.7	48.9	9.4	1.9	---	---	---	---	---	11,990	12,980	1	CI	---	---	---	Do.		
Do.....	do.....	Hvbb	¾- by 1-inch.....	35 T	7.0	40.3	46.5	13.2	2.5	---	---	---	---	---	11,530	12,400	1	CI	4	---	---	Do.		
Do.....	do.....	Hvbb	0 by 1¼-inch.....	150 T	8.8	38.8	48.1	13.1	2.3	---	---	---	---	---	11,260	12,550	1	CI	---	---	---	Do.		
Corning: Greenvalley.....	No. 6B.	Hvcb	Run-of-mine (crushed to 2-inch).	660 T	8.6	45.2	45.1	9.7	4.3	5.2	69.9	1.2	9.7	11,620	12,720	1	CI	4	---	---	---	Apr. 28, 1950.		
Jullet No. 15.....	Middle Kittanning (No. 6).	Hvbb	Run-of-mine.....	238 T	8.1	40.1	48.4	11.5	1.9	---	---	---	---	---	11,540	12,550	1	Cp	3	44	---	June 8, 1950.		

ANALYSES OF TIPLLE AND DELIVERED SAMPLES OF COAL

Liden No. 4	Upper Freeport (No. 7)	Hvbb	5-inch lump	T	7.643, 1.50.5 ¹ 6.4 2.3	12,380,13,400	1	1	12,080	2,060	Cf	Apr. 26, 1950.
Do.	Do.	Hvbb	2- by 5-inch (W)	210	7.643, 5.49.6 6.9 2.6	12,300,13,320	1	1	12,130	1,230	Cf	Do.
Do.	Do.	Hvbb	20-mesh by 2-inch (W)	315	8.643, 0.48.9 8.1 2.4	12,010,13,130	1	1	12,220	1,220	Cf	Do.
Do.	Do.	Hvbb	5-inch lump	110	7.240, 6.48.8 10.6 1.9	11,880,12,810	1	1	12,650	1,265	Cf	Apr. 27, 1950.
Do.	Do.	Hvbb	3- by 5-inch (W)	240	7.139, 7.48.0 12.3 1.9	11,650,12,550	1	1	12,650	1,265	Cf	Do.
Do.	Do.	Hvbb	1- by 3-inch (W)	300	7.341, 7.48.4 9.9 1.8	11,950,12,900	1	1	12,570	1,257	Cf	Do.
Do.	Do.	Hvbb	20-mesh by 1-inch (W)	400	9.640, 7.50.2 9.1 1.9	9,711,11,810,13,070	1	1	12,440	1,244	Cf	Do.
Crooksville:	do.	Hvcb	Run-of-mine.	325	9.644, 2.46.2 9.6 3.7	11,500,12,730	1	1	12,080	1,208	Cf	June 7, 1950.
Do.	do.	Hvcb	Run-of-mine (crushed to 2-inch).	791	10.338, 5.45.3 16.2 3.8	10,420,11,620	12	12	12,080	1,208	{ Cp(7), Cf(2), Af(2), NAb(1) }	Fiscal year 1948.
Do.	do.	Hvcb	0 by 2-inch.	4,733	8.441, 0.44.0 15.0 5.0	10,990,12,000	3	3	9,210	9,210	Cp(3), Cf(6)	Fiscal year 1949.
Do.	do.	Hvcb	do.	15,727	10.342, 1.46.4 11.5 3.8	11,080,12,350	4	4	20,200	20,200	Cf(6), Cp(13)	Fiscal year 1950.
Do.	do.	Hvcb	0 by 1½-inch.	1,999	7.541, 8.45.0 13.2 4.3	11,280,12,190	2	2	5,200	5,200	Af(1)	Fiscal year 1949.
Do.	do.	Hvcb	Run-of-mine.	235	7.144, 6.44.2 11.2 4.6	11,760,12,660	1	1	12,130	1,213	Cp(4), Cf(1)	June 5, 1950.
East Fultonham:	do.	Hvbb	Run-of-mine (crushed to 1¼-inch).	310	8.143, 7.48.5 7.8 4.1	9,112,10,060,13,120	1	1	12,080	1,208	Cf	May 15, 1950.
Do.	do.	Hvbb	0 by 4-inch.	1,035	8.141, 7.48.3 10.0 3.9	11,760,12,800	3	3	6,210	6,210	Cf	Fiscal year 1950.
Do.	do.	Hvbb	1- by 2½-inch.	3,955	8.239, 8.46.4 13.8 3.8	11,070,12,120	4	4	12,050	12,050	Cp(10), Cf(2)	Do.
Do.	do.	Hvbb	0 by 1½-inch.	1,059	9.039, 7.46.4 13.9 3.4	11,070,12,160	2	2	4,510	4,510	Cp(2), Cf(2)	Do.
Do.	do.	Hvbb	Run-of-mine.	300	8.943, 3.48.3 8.4 2.5	11,990,13,160	1	1	12,360	1,236	Cf	Apr. 11, 1950.
Do.	do.	Hvbb	do.	1,331	11.738, 8.47.4 13.8 3.0	10,690,12,110	13	13	12,150	1,215	{ Cf(4), Cp(6), Af(2), NAb(1), Cf }	Fiscal year 1948.
Do.	do.	Hvbb	Run-of-mine (crushed to 2-inch).	150	7.842, 1.46.6 11.3 3.2	11,680,12,670	1	1	12,180	1,218	Cf	Apr. 11, 1950.
Do.	do.	Hvbb	2- by 5-inch (W)	1,025	8.146, 4.46.5 7.1 3.5	12,220,13,300	1	1	12,180	1,218	Cf	May 11, 1950.
Do.	do.	Hvbb	2- by 4-inch.	1,772	7.243, 9.47.3 8.8 4.8	12,110,13,050	15	15	12,110	1,211	Cf(13), Cp(2)	Fiscal year 1948.
Do.	do.	Hvbb	do.	450	7.144, 0.48.0 8.0 3.7	12,160,13,090	2	2	12,160	1,216	Cp,Cf	Fiscal year 1949.
Do.	do.	Hvbb	1¼- by 2-inch.	199	7.144, 2.48.6 7.2 3.3	12,320,13,260	2	2	2,210	2,210	Cf	Fiscal year 1948.
Do.	do.	Hvbb	1¼- by 2-inch.	2,443	6.842, 9.48.3 8.5 4.6	12,030,12,900	1	1	12,380	1,238	Cf	Fiscal year 1949.
Do.	do.	Hvbb	do.	2,043	6.245, 2.47.3 7.5 3.8	12,380,13,260	4	4	10,270	10,270	Cf	May 11, 1950.
Do.	do.	Hvbb	do.	395	7.935, 8.46.1 8.1 3.7	11,920,13,140	1	1	12,180	1,218	Cf	Fiscal year 1948.
Do.	do.	Hvbb	¾- by 2-inch (W)	1,066	6.944, 1.47.1 8.8 4.1	12,150,13,060	1	1	11,980	1,198	Cf	Fiscal year 1949.
Do.	do.	Hvbb	¾- by 1¼-inch.	1,544	7.744, 6.47.1 8.3 3.5	12,090,13,000	7	7	12,080	1,208	Cf(7), Cp(1)	Fiscal year 1949.
Do.	do.	Hvbb	¾- by 1¼-inch (W)	450	10.245, 0.48.4 6.6 3.2	11,920,13,270	1	1	12,450	1,245	Cf	June 9, 1950.
Do.	do.	Hvbb	¾- by 1-inch (W)	415	10.944, 3.47.3 8.4 3.3	11,630,13,030	1	1	12,260	1,226	Cf	May 11, 1950.
Do.	do.	Hvbb	¾- by 1-inch (W)	1,101	9.243, 8.47.1 9.1 3.6	11,770,12,900	5	5	10,230	10,230	Cf	Fiscal year 1950.
Do.	do.	Hvbb	20-mesh by ¾-inch (W)	190	10.241, 6.47.3 11.1 3.2	11,310,12,590	1	1	12,260	1,226	Cf	May 11, 1950.
Do.	do.	Hvbb	0 by 1½-inch.	1,847	9.241, 0.46.0 13.0 4.4	11,200,12,330	4	4	5,210	5,210	Cf(3), Cp(2)	Fiscal year 1948.
Do.	do.	Hvbb	0 by 1¼-inch.	1,000	9.141, 8.45.9 12.3 5.1	11,330,12,460	1	1	12,180	1,218	Cp	Do.
Do.	do.	Hvbb	do.	1,287	11.042, 0.47.5 10.5 2.9	11,140,12,520	17	17	12,180	1,218	{ Cf(8), Cp(7), Af(2) }	Fiscal year 1950.
Do.	do.	Hvbb	Run-of-mine (crushed to 1¼-inch).	500	9.243, 1.49.2 7.7 2.5	11,920,13,120	1	1	12,210	1,221	Cf	May 16, 1950.
Do.	do.	Hvbb	Run-of-mine.	3,062	12.438, 7.50.4 10.9 2.2	10,780,12,310	5	5	13,200	13,200	Cf	Fiscal year 1949.
Do.	do.	Hvbb	¾- by 1½-inch.	50	8.943, 7.50.1 6.2 2.1	12,120,13,300	1	1	12,330	1,233	Cf	May 16, 1950.
Do.	do.	Hvbb	0 by 1½-inch.	5,494	8.338, 0.43.3 18.7 4.6	10,410,11,350	11	11	12,330	1,233	Cp(7), Cf(4)	Fiscal year 1950.
Do.	do.	Hvbb	Run-of-mine (crushed to 2-inch).	447	13.634, 7.44.1 21.2 3.5	9,340,10,810	3	3	12,730	1,273	{ Af(1), NAb(1), Cp(1) }	Fiscal year 1949.
Do.	do.	Hvbb	5-inch lump.	168	9.543, 2.52.3 2.4 1.3	12,460,13,770	1	1	12,530	1,253	Cf	Apr. 25, 1950.
Do.	do.	Hvbb	2- by 5-inch (W)	130	10.443, 6.53.0 2.5 1.3	11,780,12,890	1	1	12,530	1,253	Cf	Do.
Do.	do.	Hvbb	2- by 5-inch.	39	8.541, 6.50.4 8.0 3.1	11,780,12,890	1	1	6,210	6,210	Cp	Fiscal year 1948.
Do.	do.	Hvbb	¾- by 1¼-inch.	3,607	8.542, 0.50.6 7.4 2.4	12,010,13,130	4	4	12,500	1,250	Cf(3), Cp(3)	Fiscal year 1950.
Do.	do.	Hvbb	¾- by 1-inch (W)	30	10.643, 5.52.3 4.2 1.6	12,200,13,650	1	1	12,680	1,268	Cf	Apr. 25, 1950.
Do.	do.	Hvbb	20-mesh by 2-inch (W)	450	13.642, 0.52.1 5.9 1.3	11,460,13,220	1	1	9,540	9,540	NAb	Fiscal year 1949.
Do.	do.	Hvbb	0 by 2-inch.	116	6.732, 0.43.3 24.7 1.7	9,540,10,220	2	2	11,960	11,960	Cf	Fiscal year 1950.
Do.	do.	Hvbb	2- by 5-inch.	753	7.942, 3.48.2 9.5 3.7	10,930,11,940	5	5	8,290	8,290	Cp(7), Cf(1)	Do.
Do.	do.	Hvbb	0 by 1½-inch.	1,377	8.538, 9.46.1 15.0 3.3	10,930,11,940	5	5	8,290	8,290	Cp(7), Cf(1)	Do.

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 * Numbers above 1 indicate the number of deliveries averaged.

LE FLORE COUNTY	Lower Hartshorne.	1½-inch lump.	86	D	1.2, 17.3, 77.0	5.7	1.0	14,380	14,550	2	Cg	Fiscal year 1948.	
Doksché:	do.	do.	197 <td>D</td> <td>1.218, 9.74, 6</td> <td>7.4</td> <td>1.1</td> <td>14,050</td> <td>14,220</td> <td>4</td> <td>Cf (2), Cg (2)</td> <td>Fiscal year 1949.</td>	D	1.218, 9.74, 6	7.4	1.1	14,050	14,220	4	Cf (2), Cg (2)	Fiscal year 1949.	
Do.	do.	do.	48	D	1.017, 7.75, 8	6.5	7	14,280	14,410	1	Cg	Fiscal year 1950.	
Evans	Lower Hartshorne.	Run-of-mine	250	T	4.017, 4.76, 2	6.4	1.0	2.5	14,020	14,600	1	Cg	May 19, 1948.
Neely	do.	3-by 7-inch.	175	D	1.817, 9.74, 2	7.9	1.5	13,920	14,180	1	Cf	Fiscal year 1950.	
Howe:	do.	Run-of-mine.	360	D	1.219, 9.74, 4	5.7	9	14,490	14,670	1	Cg	Fiscal year 1948.	
Do.	do.	do.	533	D	2.619, 8.73, 7	6.5	1.2	14,160	14,540	1	Cg	Fiscal year 1949.	
Do.	do.	do.	1,379	D	2.520, 2.73, 7	6.1	1.1	14,270	14,640	3	Cg	Fiscal year 1950.	
Poteau: Clifford-Galther.	Cavanal.	Lump.	81	D	2.129, 2.65, 4	5.4	1.7	14,240	14,550	2	Cg (1)	Fiscal year 1949.	
MUSKOGEE COUNTY													
Porum:	Stigler	Run-of-mine	200	T	3.928, 0.60, 0	12.0	4.9	1.9	13,060	13,590	1	Cg	May 18, 1948.
Silvercrest.	do.	2½-by 6-inch.	20	T	2.027, 4.88, 6	14.0	7.4	12,930	13,190	1	Cg	Do.	
Do.	do.	0 by 1½-inch.	450	D	4.628, 3.88, 9	12.8	4.6	12,750	13,370	2	Cg	Fiscal year 1948.	
Do.	do.	0 by 1¼-inch.	63	D	1.327, 8.67, 3	14.9	5.5	12,830	13,000	1	Cg	Fiscal year 1949.	
OFMULGEE COUNTY													
Henryetta:	Henryetta.	1¼-by 2½-inch	57	D	5.238, 0.54, 2	7.8	2.8	12,890	13,600	2	Cf	Fiscal year 1948.	
Alias.	do.	¾-by 1½-inch (O.T.)	376	D	4.837, 5.44, 4	7.7	2.3	13,000	13,660	4	Cf	Do.	
Do.	do.	2½-inch lump.	8	D	5.838, 4.56, 0	5.6	8	13,140	13,950	1	Cf	Fiscal year 1950.	
Blackstone.	do.	1¼-by 2½-inch.	82	D	4.739, 4.53, 0	7.6	2.3	12,840	13,470	2	Cf	Fiscal year 1949.	
Do.	do.	do.	38	D	5.637, 4.36, 4	6.2	2.6	12,940	13,710	1	Cf	Fiscal year 1950.	
Morris: Broken Aro.	do.	do.											
ROGERS COUNTY													
Catoosa: McNabb.	do.	do.	71	D	4.234, 5.57, 3	8.2	0.6	13,030	13,600	2	Cf	Fiscal year 1948.	
Claremore:	do.	2-by 4-inch.	985	D	5.334, 0.50, 1	6.9	8	13,090	13,810	2	Cf	Do.	
Sequoyah.	do.	do.	919	D	4.234, 5.60, 3	6.4	6	13,460	14,060	1	Cf	Fiscal year 1949.	
Do.	do.	1¼-by 2½-inch	141	D	5.933, 5.60, 3	6.4	6	13,060	13,880	4	Cf (3), Cf (1)	Do.	
Do.	do.	do.	94	D	5.934, 5.60, 8	4.7	6	13,420	14,260	2	Cf	Fiscal year 1950.	
Do.	do.	¾-by 1¼-inch.	21	D	7.734, 1.99, 9	6.0	6	12,920	14,000	1	Cf	Do.	
Do.	do.	0 by 1¼-inch (W).	4,011	D	7.733, 2.57, 3	9.5	7	12,360	13,420	9	Cg (3), Cf (6)	Fiscal year 1948.	
Oologah:	Dawson.	2½-by 6-inch	302	D	8.837, 9.48, 5	13.6	3.0	11,970	12,450	1	Cf	Fiscal year 1950.	
Sooner.	do.	1¼-by 4-inch	369	D	3.536, 6.62, 6	10.8	3.9	12,800	13,290	2	Cf	Fiscal year 1948.	
Do.	do.	do.	483	D	4.139, 1.51, 3	9.0	4.1	12,860	13,430	2	Cf	Fiscal year 1950.	
Do.	do.	1¼-by 2½-inch.	5,375	D	4.239, 3.51, 7	9.0	3.9	12,970	13,840	8	Do.	Do.	
Do.	do.	1-by 6-inch.	2,375	D	5.538, 5.53, 1	8.4	8.0	12,800	13,570	3	Cf	Fiscal year 1948.	
Do.	do.	28-mesh by 1-inch (W).	2,449	D	4.938, 9.53, 0	8.1	3.7	12,010	13,890	9	Cf	Fiscal year 1949.	
Do.	do.	do.	1,844	D	5.338, 5.51, 8	9.7	3.7	12,660	13,370	3	Cf	Fiscal year 1950.	
Do.	do.	do.	3,039	D	3.939, 2.62, 9	7.9	3.7	13,190	13,730	5	Cf	Fiscal year 1949.	
Do.	do.	0 by 1¼-inch (W).								3	Cf		

PENNSYLVANIA

Anthracite

CARBON COUNTY	Andenried.	Stove.	300	T	5.6	3.5	86.1	10.4	0.5	12,480	13,230	1	N Aa	Feb. 10, 1949.
Andenried:	do.	Chestnut.	270	T	5.0	3.7	86.6	9.7	5	12,660	13,350	1	N Aa	Do.
Do.	do.	do.	70	T	4.9	4.1	87.3	8.6	5	12,860	13,520	1	N Aa	Do.
Do.	do.	Buckwheat No. 1.	100	T	5.6	4.1	85.6	10.3	5	12,520	13,250	1	N Aa	Fiscal year 1949.
Do.	do.	do.	2,106	T	4.7	4.6	84.3	11.1	6	12,510	13,130	7	N Aa	Feb. 10, 1949.
Do.	do.	Rice.	100	T	7.3	4.2	83.4	12.4	4	11,970	12,910	1	N Aa	Fiscal year 1949.
Do.	do.	do.	122	D	3.8	3.9	84.9	11.2	4	12,580	13,070	1	N Aa	Fiscal year 1949.
Do.	do.	Barley.	70	T	5.8	4.2	81.1	14.7	5	11,790	12,510	1	N Aa	Feb. 10, 1949.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPLLE AND DELIVERED SAMPLES OF COAL

County	Sample No.	Material	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis Date	Remarks
SCHUYLKILL COUNTY	Ashland:	Columbia	40	4.6	5.283.111.7	77.7	12,600.13,200	Mar. 17, 1949	NAA
		do	49	3.9	5.385.3 9.4	77.7	13,030.13,560	Fiscal year 1949	NAA
		do	257	4.1	6.883.410.6	6	12,850.13,400	Fiscal year 1950	NAA
		Chestnut	100	4.9	4.982.812.3	7	12,400.13,040	Mar. 17, 1949	NAA
		do	100	3.9	6.180.613.3	7	12,520.13,030	Fiscal year 1950	NAA
		Pea	40	4.7	5.279.815.0	7	12,080.12,620	Do.	NAA
		Buckwheat No. 1	50	3.9	5.282.911.9	7	12,910+	Fiscal year 1950	NAA
		do	1,086	4.5	6.278.515.3	7	11,990.12,570	Mar. 17, 1949	NAA
		do	50	4.1	5.781.113.2	7	12,910+	Do.	NAA
		Rice	100	5.0	5.883.610.6	7	12,350.12,980	Mar. 17, 1949	NAA
		Chestnut	50	5.3	5.883.310.9	7	12,570.13,210	Do.	NAA
		Pea	70	5.1	6.181.312.6	6	12,320.12,970	Fiscal year 1948	NAA
		Buckwheat No. 1	908	5.4	6.078.415.6	6	11,740.12,410	Mar. 17, 1949	NAA
		do	70	5.5	6.577.116.4	5	11,620.12,290	Do.	NAA
		Rice and Barley	50	5.3	6.781.411.9	6	12,260.12,940	Aug. 30, 1949	NAA
		Buckwheat Nos. 4 and 5	100	4.9	5.683.710.7	6	12,910+	Do.	NAA
		Stove	150	4.4	4.886.1 9.3	5	12,910+	Aug. 13, 1947	NAA
		do	98	4.5	4.983.611.5	7	2,730	Oct. 11, 1949	NAA
		do	100	4.7	5.284.410.4	6	12,670.13,100	Fiscal year 1949	NAA
		Chestnut	150	4.9	4.884.011.2	6	12,520.13,160	Aug. 13, 1947	NAA
do	603	5.2	4.884.311.0	6	12,510.13,200	Oct. 11, 1949	NAA		
Pea	50	4.5	5.83.711.3	6	12,500.13,090	Fiscal year 1949	NAA		
do	70	4.7	4.833.611.6	6	12,440.13,060	Aug. 13, 1947	NAA		
do	542	4.2	5.831.513.0	6	12,300.12,840	Oct. 11, 1949	NAA		
Buckwheat No. 1	50	5.1	6.80.512.9	6	12,190.12,840	Fiscal year 1949	NAA		
do	100	4.6	5.82.212.6	6	12,270.12,980	Aug. 13, 1947	NAA		
do	4,516	4.8	5.82.712.6	6	12,340.12,880	Oct. 11, 1949	NAA		
Rice	50	4.8	5.83.111.3	6	12,440.13,070	Fiscal year 1949	NAA		
do	3.1	5.81.612.7	6	11,940.12,720	Aug. 13, 1947	NAA			
do	733	6.5	5.82.113.0	6	12,180.12,800	Oct. 11, 1949	NAA		
Barley	130	4.9	5.82.513.2	6	12,250.12,870	Fiscal year 1948	NAA		
do	200	4.9	5.82.513.2	6	11,640.12,650	Oct. 11, 1949	NAA		
do	154	8.0	5.80.513.8	6	11,900.12,810	Fiscal year 1949	NAA		
do	164	7.1	5.82.112.9	6	11,940.12,560	Aug. 13, 1947	NAA		
Buckwheat No. 4	50	4.9	4.980.614.5	6	12,550.13,140	Oct. 11, 1949	NAA		
do	100	4.5	6.184.510.4	5	11,880.12,530	Aug. 13, 1947	NAA		
do	100	5.2	4.78.814.8	6	12,910+	Do.	NAA		
Buckwheat No. 5	70	5.2	5.431.513.1	6	12,080.12,710	Oct. 11, 1949	NAA		
do	50	5.5	7.283.6 9.2	7	12,900.13,740	Mar. 18, 1948	NAA		
Stove	68	3.5	7.82.010.2	6	13,030.13,510	Fiscal year 1948	NAA		
do	75	4.4	5.779.614.7	7	12,180.12,740	Fiscal year 1949	NAA		
Chestnut	100	6.5	7.182.810.1	6	12,760.13,640	Mar. 18, 1948	NAA		
do	489	5.4	8.181.510.4	6	12,700.13,630	Fiscal year 1949	NAA		
do	75	4.7	6.178.115.8	6	17,960.13,640	Fiscal year 1949	NAA		
Pea	70	5.5	7.481.111.5	6	15,500.13,320	Mar. 18, 1948	NAA		
do	970	5.2	7.778.913.4	6	15,300.13,070	Fiscal year 1948	NAA		
Buckwheat No. 1	120	4.9	8.279.112.7	6	12,390.13,020	Mar. 18, 1948	NAA		
do	4,386	6.4	8.576.215.3	6	11,720.12,520	Fiscal year 1948	NAA		
do	121	7.7	8.477.214.4	5	11,610.12,860	Fiscal year 1949	NAA		
Rice	120	5.7	7.973.518.6	6	11,320.12,010	Mar. 18, 1948	NAA		
Barley	140	7.0	7.75.415.9	6	11,490.12,360	Fiscal year 1949	NAA		
do	1,002	10.2	9.674.316.1	6	10,930.12,170	Do.	NAA		
Buckwheat No. 4	105	6.4	8.871.519.7	6	11,010.11,790	Fiscal year 1948	NAA		
Buckwheat No. 5	105	5.5	9.872.517.7	7	11,280.11,930	Mar. 18, 1948	NAA		
Stove	95	4.8	4.892.312.9	6	12,190.12,800	Oct. 1, 1948	NAA		
do	50	5.0	5.951.612.5	6	12,410.13,070	Nov. 10, 1949	NAA		
Chestnut	134	5.8	5.380.014.7	5	11,760.12,490	Oct. 1, 1948	NAA		
do	50	5.4	6.082.111.9	7	12,360.13,070	Nov. 10, 1949	NAA		
Pea	165	5.1	7.477.914.7	6	11,770.12,410	Oct. 1, 1948	NAA		
do	50	5.5	6.280.813.0	6	12,170.12,860	Nov. 10, 1949	NAA		
Buckwheat No. 1	100	7.0	7.179.413.5	6	11,810.12,470	Oct. 1, 1948	NAA		
do	70	4.9	6.082.311.7	6	12,430.13,060	Nov. 10, 1949	NAA		
Rice	100	7.8	7.878.114.1	6	11,470.12,440	Oct. 1, 1948	NAA		
do	200	4.7	6.381.312.4	4	12,270.12,860	Nov. 10, 1949	NAA		
Barley	50	4.6	6.778.315.0	5	11,780.12,340	Oct. 1, 1948	NAA		
do	70	6.3	6.879.413.8	5	11,840.12,630	Nov. 10, 1949	NAA		

* Numbers in parentheses indicate the number of determinations made.

! See Explanation of Symbols (p. 5).
 * Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Do.	do.	100	T	4.41	7.379	9.12.8	8.1	12,640	13,210	N Aa	Nov. 9, 1949.
Do.	Buckwheat No. 1.	100	T	4.8	7.179	8.13.1	6	12,380	13,000	N Aa	Sept. 21, 1948.
Do.	do.	50	D	3.5	6.780	6.12.7	7	12,780	13,220	N Aa	Nov. 9, 1949.
Do.	do.	217	D	5.7	8.275	2.16.6	7	11,670	12,380	N Aa	Fiscal year 1948.
Do.	Rice	50	T	4.8	6.980	6.12.5	5	12,460	13,100	N Aa	Sept. 21, 1948.
Do.	do.	50	T	3.6	7.179	6.13.3	7	12,670	13,140	N Aa	Nov. 9, 1949.
Do.	Barley	50	T	3.5	7.177	7.15.2	5	12,200	12,640	N Aa	Sept. 21, 1948.
Do.	do.	50	T	5.8	7.177	5.15.4	7	12,000	12,740	N Aa	Nov. 9, 1949.
Do.	Buckwheat No. 4.	30	T	4.7	6.878	7.14.5	7	12,270	12,880	N Aa	Do.
Do.	Buckwheat Nos. 4 and 5.	50	T	3.7	7.376	8.15.9	5	12,000	12,470	N Aa	Sept. 21, 1948.
Do.	do.	25	T	5.7	5.676	4.18.0	4	11,260	11,940	N Aa	Aug. 23, 1949.
Do.	Pea	40	T	5.6	5.681	8.12.6	5	12,070	12,780	N Aa	Do.
Do.	Buckwheat No. 1.	49	D	6.6	5.983	4.10.7	4	12,230	13,090	N Aa	Fiscal year 1950.
Do.	do.	60	T	5.2	5.781	6.12.7	4	12,070	12,730	N Aa	Aug. 23, 1949.
Do.	Rice	65	T	5.1	5.981	2.12.9	5	12,040	12,680	N Aa	Do.
Do.	Barley	35	T	5.2	6.382	3.11.4	5	12,210	12,870	N Aa	Do.
Do.	Buckwheat No. 1.	100	T	4.8	4.585	0.10.5	6	12,610	13,250	N Aa	Oct. 20, 1948.
Do.	do.	200	T	4.8	4.184	1.11.8	6	12,490	13,110	N Aa	Nov. 7, 1949.
Do.	Chestnut	150	T	5.0	4.383	4.11.5	6	12,410	13,040	N Aa	Sept. 20, 1948.
Do.	do.	250	T	5.0	4.383	4.12.3	6	12,380	13,030	N Aa	Nov. 7, 1949.
Do.	Pea	100	T	4.5	4.482	8.12.8	5	12,110	12,850	N Aa	Sept. 20, 1948.
Do.	do.	150	T	4.5	4.783	2.12.1	5	12,370	12,950	N Aa	Nov. 7, 1949.
Do.	Buckwheat No. 1.	100	T	4.9	4.882	9.11.6	5	12,340	12,980	N Aa	Oct. 20, 1948.
Do.	do.	200	T	4.8	4.882	3.12.9	5	12,240	12,860	N Aa	Nov. 7, 1949.
Do.	do.	167	T	5.1	5.482	3.12.3	5	12,240	12,890	N Aa	Fiscal year 1950.
Do.	Rice	150	T	5.6	5.183	7.11.2	5	12,260	12,990	N Aa	Sept. 20, 1948.
Do.	Barley	120	T	6.1	4.684	6.10.8	5	11,970	13,160	N Aa	Nov. 7, 1949.
Do.	do.	150	T	5.6	5.081	9.13.1	5	11,490	12,670	N Aa	Sept. 20, 1948.
Do.	Buckwheat No. 4.	50	T	4.9	4.983	5.11.6	5	12,360	13,010	N Aa	Nov. 7, 1949.
Do.	do.	50	T	5.0	4.983	5.12.5	5	12,180	12,810	N Aa	Sept. 20, 1948.
Do.	Buckwheat No. 4.	100	T	4.1	5.882	4.12.1	5	12,340	12,870	N Aa	Sept. 20, 1948.
Do.	do.	100	T	5.5	6.178	9.15.0	6	11,730	12,420	N Aa	Sept. 20, 1948.
Do.	Buckwheat No. 5.	100	T	4.4	5.582	7.11.8	5	12,340	12,910	N Aa	Nov. 7, 1949.
Do.	do.	50	T	5.1	4.822	0.12.8	6	12,220	12,780	N Aa	Oct. 25, 1948.
Do.	Egg	200	T	3.2	4.984	2.10.9	6	12,790	13,210	N Aa	Do.
Do.	Stove	100	T	3.1	3.885	8.10.4	6	12,860	13,280	N Aa	Do.
Do.	Chestnut	200	T	3.7	3.885	7.10.5	6	12,780	13,270	N Aa	Do.
Do.	Pea	100	T	4.5	4.483	5.12.1	6	12,440	13,020	N Aa	Do.
Do.	Buckwheat No. 1.	120	T	3.5	5.183	4.11.5	6	12,650	13,110	N Aa	Do.
Do.	Rice	50	T	3.6	4.283	9.11.9	6	12,910	13,080	N Aa	Do.
Do.	Barley	70	T	4.4	4.822	5.13.5	6	12,870	13,080	N Aa	Do.
Do.	Buckwheat No. 4.	50	T	5.1	4.822	0.12.8	6	12,230	12,880	N Aa	Do.
Do.	Stove	114	T	2.7	8.180	6.11.3	8	12,990	13,340	N Aa	Aug. 26, 1947.
Do.	do.	90	T	5.0	7.480	9.11.7	9	12,670	13,330	N Aa	Sept. 28, 1948.
Do.	do.	100	T	3.9	8.679	7.11.7	7	12,880	13,410	N Aa	Nov. 9, 1949.
Do.	do.	82	D	2.4	7.182	1.11.8	6	12,710	13,200	N Aa	Fiscal year 1950.
Do.	Chestnut	90	T	4.3	7.807	3.11.6	7	12,940	13,250	N Aa	Aug. 26, 1947.
Do.	do.	100	T	4.3	7.807	3.11.9	9	12,720	13,290	N Aa	Sept. 28, 1948.
Do.	do.	100	T	4.6	8.678	5.12.9	7	12,580	13,180	N Aa	Nov. 9, 1949.
Do.	Pea	103	T	3.8	9.079	1.11.9	9	12,650	13,160	N Aa	Aug. 26, 1947.
Do.	do.	80	T	3.5	7.081	7.11.3	9	12,950	13,420	N Aa	Sept. 28, 1948.
Do.	do.	90	T	3.8	8.780	6.10.7	7	13,040	13,560	N Aa	Nov. 9, 1949.
Do.	do.	51	D	3.1	7.780	4.11.9	9	12,930	13,340	N Aa	Fiscal year 1949.
Do.	do.	1,569	D	2.1	7.979	2.12.9	9	12,750	13,160	N Aa (13), N Ab (1)	Fiscal year 1950.
Do.	Buckwheat No. 1.	130	T	4.3	9.177	5.13.4	9	12,330	12,890	N Aa	Aug. 26, 1947.
Do.	do.	50	T	2.6	7.279	0.13.8	9	12,630	12,960	N Aa	Sept. 28, 1948.
Do.	do.	1	T	4.1	8.779	8.11.5	7	12,810	13,350	N Aa	Nov. 9, 1949.
Do.	do.	1,319	D	3.8	8.076	6.15.4	10	12,180	12,660	N Aa	Fiscal year 1949.
Do.	do.	409	D	4.4	6.807	8.12.7	7	12,440	13,010	N Aa	Fiscal year 1950.
Do.	do.	48	D	4.2	8.770	4.20.9	10	11,200	11,690	N Aa	Aug. 26, 1947.
Do.	Rice	78	T	3.3	7.379	0.13.7	9	12,560	12,880	N Aa	Sept. 28, 1948.
Do.	do.	52	T	4.7	9.179	3.11.6	8	12,610	13,240	N Aa	Nov. 9, 1949.
Do.	Barley	43	T	5.1	10.270	7.10.1	9	11,200	11,800	N Aa	Aug. 26, 1947.
Do.	do.	70	T	3.1	8.077	2.14.8	9	12,410	12,800	N Aa	Sept. 28, 1948.
Do.	do.	50	T	4.6	9.177	2.13.7	8	12,330	12,830	N Aa	Nov. 9, 1949.
Do.	do.	818	D	8.1	7.773	2.19.1	8	11,090	12,070	N Aa	Fiscal year 1948.

* Numbers in parenthese indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

* Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample No.	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis Date	Notes
Mill Creek Manor: Eagle Hill.	An do	98	4.2	5.2	12.5	12,550	Fiscal year 1948	
	An do	122	4.9	6.0	13.1	12,900	Fiscal year 1950	
	An Chestnut	96	5.8	1.81	5.12	12,140	Aug. 7, 1947	
	An do	100	5.0	5.83	4.11	12,480	June 7, 1949	
	An do	94	4.9	4.82	2.13	12,180	Fiscal year 1948	
	An do	169	4.9	6.27	1.16	11,730	Fiscal year 1950	
	An Pea	70	4.8	5.82	6.11	11,320	Aug. 7, 1947	
	An do	65	4.4	4.82	5.12	12,320	Fiscal year 1949	
	An do	2,477	5.3	4.82	5.12	12,120	Fiscal year 1948	
	An do	6,857	5.2	5.28	4.12	12,230	Fiscal year 1950	
Buckwheat No. 1.	An do	55	4.8	5.84	5.10	12,360	Aug. 7, 1947	
	An do	120	3.7	5.81	9.12	12,510	June 7, 1949	
	An do	209	5.8	5.80	7.13	11,850	Fiscal year 1948	
	An do	4,091	5.8	4.83	4.11	12,210	Fiscal year 1949	
	An do	6,004	5.8	5.81	9.12	12,140	Fiscal year 1950	
	An Rice	58	5.6	5.82	9.11	12,170	Aug. 7, 1947	
	An do	100	3.8	5.98	7.12	12,280	June 7, 1949	
	An do	67	2.8	8.17	5.14	12,530	Fiscal year 1948	
	An do	779	6.8	6.80	0.14	11,800	Fiscal year 1950	
	An Barley	110	5.1	7.27	4.15	11,630	Aug. 7, 1947	
Buckwheat No. 4.	An do	100	3.5	7.17	4.15	11,900	June 7, 1949	
	An do	617	6.4	5.75	5.19	10,970	Aug. 7, 1949	
	An do	20	5.5	6.97	2.15	11,450	Fiscal year 1948	
	An do	40	4.4	8.97	7.16	11,380	Aug. 7, 1947	
	An do	55	4.8	4.83	2.12	12,410	Nov. 7, 1949	
	An Chestnut	55	6.0	5.18	5.11	12,340	Do.	
	An Pea	70	7.3	5.80	4.14	11,650	Do.	
	An do	50	5.4	5.82	3.12	12,650	Do.	
	An Rice	55	5.8	5.81	1.13	11,970	Do.	
	An Barley	55	7.1	5.80	9.13	11,800	Do.	
Minersville: Oak Hill.	An Egg	100	4.8	5.83	6.11	12,520	Aug. 12, 1947	
	An do	100	4.2	4.98	3.9	12,830	Oct. 15, 1949	
	An Stove	70	4.8	5.18	5.11	12,560	Aug. 12, 1947	
	An do	250	3.9	4.84	9.10	12,850	Oct. 15, 1949	
	An Chestnut	65	5.3	6.82	1.11	12,480	Aug. 12, 1947	
	An do	300	4.2	5.18	3.11	12,690	Oct. 15, 1949	
	An do	3,654	3.9	4.84	6.10	12,730	Fiscal year 1949	
	An Pea	60	4.8	5.82	4.12	12,440	Aug. 12, 1947	
	An do	100	4.7	4.83	6.11	12,510	Oct. 15, 1949	
	An do	694	4.8	5.81	5.12	12,250	Fiscal year 1949	
Buckwheat No. 1.	An do	200	4.4	4.83	8.10	12,650	Aug. 12, 1947	
	An do	150	3.8	4.84	7.10	12,740	Aug. 12, 1949	
	An do	147	6.4	6.82	2.10	12,240	Fiscal year 1948	
	An do	4,993	4.3	5.83	7.11	12,570	Fiscal year 1949	
	An Rice	100	4.6	5.82	7.11	12,410	Aug. 12, 1949	
	An do	150	4.5	4.84	9.10	12,710	Fiscal year 1948	
	An do	8,099	5.5	6.81	9.12	12,260	Aug. 12, 1947	
	An Barley	150	4.9	5.81	9.12	12,300	Oct. 15, 1949	
	An do	50	3.6	5.18	1.11	12,630	Fiscal year 1948	
	An do	150	4.5	5.81	3.12	12,230	Aug. 12, 1947	
Buckwheat No. 5.	An do	50	4.8	7.76	0.16	11,650	Do.	
	An do	50	5.4	5.83	7.11	12,490	Oct. 15, 1949	
	An Stove	45	6.1	5.81	0.13	12,410	Aug. 12, 1949	
	An Chestnut	200	4.3	4.83	1.12	12,470	June 28, 1949	
	An do	200	3.2	5.81	8.12	12,530	Oct. 11, 1948	
	An do	64	2.4	6.79	4.14	12,450	Fiscal year 1948	
	An Chestnut	170	4.3	5.81	8.12	12,400	Apr. 20, 1949	
	An do	300	3.2	5.81	5.12	12,520	Oct. 11, 1948	
	An Pea	150	4.4	5.81	1.13	12,290	Apr. 20, 1949	
	An do	100	3.0	5.81	7.12	11,930	Oct. 11, 1948	
Buckwheat No. 1	An do	100	3.7	5.07	8.16	12,130	Fiscal year 1948	
	An do	150	3.1	5.87	9.15	12,450	Oct. 11, 1948	
	An do	100	4.2	4.87	8.15	11,950	Apr. 20, 1949	
	An Rice	100	2.9	5.81	6.13	12,430	Oct. 11, 1948	
	An do	100	3.9	5.80	4.14	12,220	Apr. 20, 1949	
	An Barley	70	3.3	5.78	7.15	12,220	Oct. 11, 1948	
	An do	105	2.8	5.97	7.17	12,040	Apr. 20, 1949	
	An do	50	4.5	5.77	3.17	11,800	Fiscal year 1948	
	An do	70	3.4	5.18	0.13	12,710	Oct. 11, 1948	
	An do	100	3.4	5.18	0.13	12,340	Apr. 20, 1949	

* Numbers in parentheses indicate the number of determinations made.

† See Explanation of Symbols (p. 5).

‡ Numbers above † indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Sample Name	Quantity	Unit	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis Date	Notes
Raven Run: Mammoth	100	Do.	5.580	8.133	7.7	11,920	Aug. 22, 1947.	
Do.	100	Do.	5.681	11.33	6	12,090	Do.	
Do.	150	Do.	5.584	6.9	6	12,600	Sept. 14, 1947.	
Do.	150	Do.	5.781	213.1	5	12,070	Aug. 22, 1947.	
Do.	200	Do.	5.084	4.106	6	12,540	Sept. 14, 1947.	
Do.	200	Do.	5.481	8.128	5	12,110	Sept. 14, 1947.	
Do.	170	Do.	5.5	1.84	10.9	12,460	Aug. 22, 1947.	
Do.	120	Do.	5.1	7.079	5.135	11,950	Sept. 14, 1949.	
Do.	100	Do.	5.2	5.182	0.129	12,170	Fiscal year 1948.	
Do.	100	Do.	5.2	5.872	6.156	11,650	Fiscal year 1949.	
Do.	200	Do.	7.8	7.576	8.127	11,680	Aug. 22, 1947.	
Do.	200	Do.	6.6	6.76	8.166	11,540	Sept. 14, 1949.	
Do.	55	Do.	5.2	5.83	4.11	11,480	Aug. 22, 1947.	
Do.	50	Do.	5.0	6.672	4.16	11,470	Sept. 14, 1949.	
Do.	100	Do.	3.8	4.852	9.123	12,360	Aug. 22, 1947.	
Do.	100	Do.	3.8	7.680	5.119	12,020	Sept. 14, 1949.	
Do.	50	Do.	4.4	4.783	2.121	12,410	Sept. 14, 1949.	
Do.	4	Do.	4.4	4.783	2.121	12,410	Sept. 14, 1949.	
St. Clair:								
St. Clair	55	Do.	4.5	4.866	3.91	12,940	Sept. 23, 1948.	
Do.	50	Do.	4.9	4.984	9.108	12,600	Nov. 4, 1949.	
Do.	519	Do.	4.2	5.184	1.102	12,660	Fiscal year 1950.	
Do.	50	Do.	3.2	5.884	1.102	12,640	Sept. 23, 1948.	
Do.	100	Do.	4.7	4.884	1.102	12,590	Nov. 4, 1949.	
Do.	100	Do.	3.9	4.884	3.109	12,890	Fiscal year 1950.	
Do.	273	Do.	3.4	4.384	3.109	12,410	Sept. 23, 1948.	
Do.	100	Do.	3.6	4.984	1.102	12,350	Nov. 4, 1949.	
Do.	100	Do.	3.6	4.984	1.102	12,710	Fiscal year 1950.	
Do.	178	Do.	4.8	4.852	4.132	12,220	Sept. 23, 1948.	
Do.	54	Do.	5.1	4.852	2.123	12,220	Nov. 4, 1949.	
Do.	139	Do.	4.6	4.79	3.145	12,420	Fiscal year 1949.	
Do.	50	Do.	4.6	5.081	3.135	12,170	Sept. 23, 1948.	
Do.	120	Do.	3.4	5.852	2.123	12,250	Nov. 4, 1949.	
Do.	400	Do.	3.7	5.79	2.133	12,100	Fiscal year 1949.	
Do.	50	Do.	4.7	5.82	7.119	12,420	Sept. 23, 1948.	
Do.	99	Do.	5.0	5.182	9.120	12,290	Nov. 4, 1949.	
Do.	170	Do.	4.5	4.851	2.140	12,340	Fiscal year 1950.	
Do.	50	Do.	4.7	5.852	9.118	12,040	Sept. 23, 1948.	
Do.	150	Do.	4.7	5.852	3.139	12,300	Nov. 4, 1949.	
Do.	100	Do.	5.8	5.852	8.116	12,200	Sept. 23, 1948.	
Do.	50	Do.	5.2	5.680	6.138	11,920	Nov. 4, 1949.	
Do.	50	Do.	8.5	6.378	9.148	11,300	Oct. 13, 1949.	
Do.	100	Do.	3.9	3.787	0.93	12,920	Do.	
Do.	600	Do.	3.5	5.085	9.1	12,050	Do.	
Do.	900	Do.	3.9	4.286	2.96	12,910	Do.	
Do.	1,100	Do.	3.9	4.086	4.96	12,800	Do.	
Do.	500	Do.	3.5	4.784	6.107	12,780	Do.	
Do.	750	Do.	3.4	4.884	0.115	12,660	Do.	
Do.	2,779	Do.	4.8	4.283	9.119	12,340	Do.	
Do.	600	Do.	3.6	4.884	9.103	12,300	Do.	
Do.	700	Do.	3.9	5.881	9.123	12,340	Do.	
Do.	600	Do.	3.9	5.881	9.123	12,130	Do.	
Do.	5,232	Do.	3.9	12.575	2.123	12,600	Do.	
Schuykill Haven: A & S	800	Do.	6.2	6.276	5.173	11,270	Oct. 18, 1948.	
Do.	85	Do.	5.4	6.277	0.168	11,720	Oct. 15, 1948.	
Do.	100	Do.	4.4	6.533	2.108	12,860	May 24, 1949.	
Do.	50	Do.	5.9	6.576	7.165	11,730	Oct. 15, 1948.	
Do.	100	Do.	4.3	5.781	7.126	12,640	May 24, 1949.	
Do.	25	Do.	6.0	6.478	1.155	11,850	Oct. 15, 1948.	
Do.	50	Do.	4.0	6.880	1.136	12,500	May 24, 1949.	
Do.	137	Do.	3.9	7.576	2.160	12,040	Fiscal year 1950.	
Do.	50	Do.	4.9	7.077	1.159	11,960	Oct. 15, 1948.	
Do.	70	Do.	3.7	5.782	8.115	12,600	May 24, 1949.	
Do.	50	Do.	3.4	6.880	3.134	12,600	Oct. 15, 1948.	
Do.	7,001	Do.	6.9	6.774	5.188	11,240	Do.	
Do.	50	Do.	5.1	6.812	4.208	11,230	Oct. 15, 1948.	
Do.	50	Do.	2.9	5.976	4.177	12,020	May 24, 1949.	

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPLLE AND DELIVERED SAMPLES OF COAL

Location	Sample Description	Weight (lb)	Moisture (%)	Volatiles (%)	Fixed Carbon (%)	Calorific Value (Btu/lb)	Analysis Date
Wildwood: Wildwood	Upper Freeport (E)	118 D	2.0	37.1	55.1	7.8	1.6
	do	54 D	2.9	36.8	57.0	6.2	1.3
	do	300 D	3.0	34.1	50.4	15.5	1.6
ARMSTRONG COUNTY	Apollo: Foster	2,400 D	2.9	34.7	52.4	12.9	1.8
	Colwell: Pittshaw No. 16	700 T	2.6	34.4	45.3	0.12	6.3
	do	1,000 D	5.2	32.4	45.5	8.1	1.1
Echo: Lunsted No. 4	Upper Freeport (E)	6,433 D	4.9	32.3	55.5	12.2	2.2
	do	21 D	1.9	35.7	54.7	9.6	2.0
	Lower Kittanning (B)	2,989 D	2.9	37.6	50.0	0.12	4.7
Kaylor: Beaver No. 1	Run-of-mine	1,776 D	3.0	34.3	50.9	14.8	3.1
	do	40 T	2.5	33.8	56.0	10.2	1.3
	do	100 T	3.2	32.5	54.6	12.9	3.0
Leechburg: Armstrong	Run-of-mine (crushed to 2 1/4-inch)	1,402 D	4.0	32.9	57.5	9.6	1.1
	do	5,264 D	4.5	33.0	55.3	11.7	2.4
	do	758 D	2.8	32.2	56.9	10.9	1.5
Mogrove Nos. 2 and 3	Run-of-mine (crushed to 1 1/4-inch)	350 T	2.9	32.8	51.6	15.6	3.3
	do	150 T	3.1	35.3	51.5	13.2	3.9
	do	200 T	3.0	32.8	52.2	15.0	2.4
Mateer: Beck	Run-of-mine (crushed to 1 1/4-inch)	100 D	5.9	35.0	50.9	14.1	4.3
	do	10 T	1.8	35.9	56.7	7.4	4.0
	do	171 D	1.8	35.5	55.2	9.1	4.3
New Bethlehem: Iseman Bros.	Run-of-mine (crushed to 1 1/4-inch)	2,502 D	1.6	36.3	53.5	10.2	4.1
	do	503 D	1.5	38.8	54.8	8.6	3.5
	do	742 D	1.7	35.5	53.5	11.3	3.7
Putneyville: Atlas	Run-of-mine (crushed to 1 1/4-inch)	905 D	1.8	33.6	54.1	10.9	4.2
	do	1,428 D	2.9	34.9	53.2	11.9	3.5
	do	1,440 D	3.3	33.9	53.5	12.6	3.4
Timblin (Jefferson County): Kiehl	Run-of-mine (crushed to 1 1/4-inch)	1,894 D	3.3	33.3	53.3	13.4	3.3
	do	1,063 D	2.5	33.5	56.6	10.0	1.7
	do	40 T	1.6	34.0	56.7	9.3	2.0
North Vandergrift: Painter	Run-of-mine (crushed to 1 1/4-inch)	851 D	2.3	34.8	57.6	7.5	2.7
	do	400 D	2.1	33.8	56.6	9.9	2.7
	do	40 T	2.7	33.5	56.3	10.2	1.6
Hawthorne: Timblin	Run-of-mine (crushed to 1 1/4-inch)	2,319 D	3.9	33.6	56.5	9.9	1.3
	do	1,378 D	4.8	36.2	53.9	9.9	3.2
	do	1,305 D	3.0	36.5	53.6	9.6	3.3
Hawthorne: Timblin	Run-of-mine (crushed to 1 1/4-inch)	3,884 D	3.0	31.7	58.3	10.0	1.4
	do	62 T	3.4	36.0	49.4	1.0	2.9
	do	3,884 D	3.0	33.3	49.4	12.3	2.2
Putneyville: Atlas	Run-of-mine (crushed to 1 1/4-inch)	30 T	2.9	35.9	53.9	10.2	2.7
	do	150 T	5.0	34.1	49.9	6.0	1.4
	do	50 T	3.0	34.9	49.4	10.7	2.1

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent										Ultimate, percent		Caloric value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ²	Agglomerating index ³	Free-swelling index	Hardgrove grindability index	Date				
						Moisture as-received coal	Volatiles as-received coal	Ash	Fixed carbon	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis	Carbon	Nitrogen	Oxygen											
PENNSYLVANIA—Continued																														
Bituminous—Continued																														
REDFORD COUNTY																														
Defiance No. 1.	Kelly		Run-of-mine	49 D	D	1.1	18.2	68.3	12.5	0.9																			Fiscal year 1948.	
Hickory Hill.	Upper Freeport		do.	63 D	D	2.0	18.3	70.1	11.6	1.6																			Fiscal year 1950.	
Louise.	Clarion (A')		do.	102 D	D	8.18	8.67	14.1	1.8																				Fiscal year 1948.	
Hopewell.	Kelly		do.	54 D	D	7.17	3.69	5.13	2.18																				Do.	
Riddlesburg.	do.	Lvb	do.	60 T	T	1.5	16.2	68.7	15.1	2.9	3.9	75.1	1.1	1.9	12.8	80.13	0.70												Aug. 11, 1948.	
Broad Top No. 1.	do.	Lvb	2-inch lump	52 D	D	1.4	17.5	62.9	19.6	2.1	2.9	75.1	1.1	1.9	12.8	80.13	0.70												Fiscal year 1948.	
Do.	do.	Lvb	do.	50 T	T	1.2	17.2	70.6	12.2	2.5																			Apr. 27, 1950.	
Do.	do.	Lvb	3½-inch W.	30 T	T	2.0	17.5	71.6	10.9	1.8																			Do.	
Do.	do.	Lvb	1½ by 2-inch (W)	52 D	D	1.3	16.0	64.4	19.6	3.0																			Fiscal year 1948.	
Do.	do.	Lvb	do.	61 D	D	2.0	15.9	61.3	22.8	3.9																			Do.	
Do.	do.	Lvb	¾ by 1½-inch	60 T	T	3.4	17.7	72.6	9.7	1.5																			Apr. 27, 1950.	
Do.	do.	Lvb	¾ by 1½-inch (W)	75 T	T	1.8	17.7	69.2	13.1	1.6																			8½	
Broad Top No. 10.	do.	Lvb	Run-of-mine	70 T	T	2.4	16.9	62.8	20.3	4.1	3.7	69.3	1.2	1.4	11.8	85.0	1.74												Aug. 11, 1948.	
Do.	do.	Lvb	do.	62 D	D	1.4	16.7	62.6	20.7	4.3																			Do.	
Do.	do.	Lvb	¾ by 1½-inch	52 D	D	1.9	15.7	59.9	24.4	3.2																				Fiscal year 1948.
Do.	do.	Lvb	do.	40 T	T	1.1	19.0	63.3	17.7	3.9	4.0	72.0	1.3	1.1	12.5	50.12	600												Do.	
Brown.	do.	Lvb	Run-of-mine	52 D	D	1.7	15.5	60.8	23.8	4.1																				Aug. 11, 1948.
Crescent No. 1.	Barnett		do.	20 T	T	1.4	17.6	67.8	14.6	4.1																				Fiscal year 1948.
Helen.	do.	Lvb	Run-of-mine	55 D	D	1.2	16.6	63.9	19.2	3.1																				Apr. 27, 1950.
Do.	do.	Lvb	do.	58 D	D	1.7	16.2	58.8	25.6	3.2																				Fiscal year 1948.
Regal Smokeless.	Speer		¾ by 1½-inch	60 D	D	8.9	18.4	72.7	8.9	1.0																				Do.
Riddlesburg washery.	Kelly and Barnett		3 by 6-inch	90 D	D	9.17	4.70	7.11	9.9	2.0																				Fiscal year 1950.
Do.	do.	Lvb	do.	108 D	D	9.16	2.66	8.17	0	3.0																			Do.	
Do.	do.	Lvb	1½ by 2½-inch	105 D	D	1.0	16.5	63.6	20.1	2.9																				Fiscal year 1948.
Do.	do.	Lvb	do.	159 D	D	1.1	16.5	63.0	19.6	2.3																			Do.	
Do.	do.	Lvb	¾ by 1½-inch	103 D	D	2.7	16.5	60.6	19.2	2.0																				Do.
Do.	do.	Lvb	0 by 1½-inch	709 D	D	4.9	17.5	67.6	14.6	1.6																				Fiscal year 1950.
Do.	do.	Lvb	0 by ¾-inch (W)																											Do.
BUTLER COUNTY																														
Boyers: Farren.	Brookville and Upper Kittanning (A and C')	Hvab	Run-of-mine	120 T	T	3.4	38.7	53.9	7.4	1.4	5.2	77.5	1.6	6.9	13.3	380	13,850												Feb. 28, 1948.	
Bruin: Knox No. 1.	Lower Freeport (D)		do.	4,450 D	D	6.2	35.6	54.7	9.7	2.4																			Fiscal year 1948.	
Do.	do.		Run-of-mine (crushed to 2½-inch).	2,609 D	D	3.4	35.6	55.0	9.4	2.4																			Fiscal year 1949.	
Do.	do.		Run-of-mine.	11,395 D	D	4.3	34.7	53.0	12.3	2.0																				Fiscal year 1950.

ANALYSES OF TIPLLE AND DELIVERED SAMPLES OF COAL

Butler: Jean Nos. 4 and 6	Upper and Lower Freeport (E and D)	Hvab	1½- by 2-inch	80 T	3.834.256.6	9.2	1.6	13,040	13,560	12,710	1	Cl	Jan. 30, 1950.
Do.	do.	Hvab	¾- by 1½-inch.	80 T	4.133.557.7	8.8	1.6	4.9	76.3	1.4	1	Cf	Do.
Do.	do.	Hvab	0 by 2-inch.	5,757 D	5.533.453.6	13.0	2.0	12,050	12,750	17,210	1	{ Cg (1), Cf (12), Cp (3), Af (1)	Fiscal year 1950.
Do.	do.	Hvab	0 by ¾-inch.	80 T	8.430.457.5	12.1	1.6	11,880	12,960	12,560	1	Cf	Jan. 30, 1950.
Tasa No. 10	Middle Kittanning (C), Upper Freeport (E)	Hvab	Run-of-mine	200 T	3.539.250.4	10.4	3.7	5.1	73.8	1.3	1	Cf	Feb. 3, 1950.
Karnes City; Kincaid.	Upper Freeport (E)	Hvab	2-inch lump.	119 D	3.036.353.4	10.3	2.8	12,920	13,320	2	Cf	Fiscal year 1950.	
Zellenople: Shirley	Lower Kittanning (B)	Hvab	do.	30 T	2.938.853.6	7.6	1.8	5.3	77.2	1.6	1	Cf	Feb. 19, 1948.
Do.	do.	Hvab	1¼- by 2-inch.	50 T	2.837.452.4	10.2	1.9	13,170	13,560	12,500	1	Cf	Do.
Do.	do.	Hvab	¾- by 1½-inch.	50 T	4.037.952.2	9.9	2.1	13,020	13,550	12,470	1	Cf	Do.
Do.	do.	Hvab	0 by ¾-inch.	80 T	6.634.953.2	11.9	2.5	12,350	13,230	12,250	1	Cf	Do.
Shirley and Little Creek.	do.	Hvab	3-inch lump.	90 T	2.239.952.4	7.7	2.1	5.4	77.2	1.4	1	Cf	Jan. 25, 1950.
Do.	do.	Hvab	2- by 3-inch.	125 T	2.638.050.8	11.2	3.0	13,060	13,410	12,080	1	Cf	Do.
Do.	do.	Hvab	1¼- by 2-inch.	110 T	3.537.051.7	11.3	3.2	12,870	13,340	12,130	1	Cf	Do.
Do.	do.	Hvab	0 by 1½-inch.	110 T	6.235.653.1	11.3	2.8	12,490	13,320	12,210	1	Cf	Do.
CAMBRIA COUNTY													
Amsbry: Kenner Nos. 1 and 2.	Upper Freeport (E)	Hvab	2½-inch lump.	50 T	2.029.650.7	9.7	2.6	13,630	13,910	12,150	1	Cg	May 19, 1950.
Do.	do.	Hvab	¾- by 2½-inch.	30 T	1.828.559.9	11.6	2.5	13,360	13,610	12,210	1	Cg	Do.
Do.	do.	Hvab	0 by ¾-inch.	20 T	3.429.752.1	8.2	2.1	13,680	14,170	12,160	1	Cg	Do.
Bakerton: Lancashire No. 15.	Lower Kittanning (B)	Mvb	¾-inch lump (W)	100 T	3.421.570.5	8.0	1.5	13,920	14,410	12,650	1	Cg	Apr. 25, 1950.
Do.	do.	Mvb	¼- by ¾-inch (W)	185 T	4.421.370.0	8.7	1.8	13,720	14,350	12,620	1	Cg	Do.
Do.	do.	Mvb	0 by 1½-inch.	2,424 D	2.521.959.3	8.8	2.0	13,910	14,270	12,390	2	Cg	Fiscal year 1950.
Do.	do.	Mvb	0 by ¾-inch.	640 T	3.121.570.8	7.7	2.2	4.6	82.1	1.3	1	Cg	Apr. 25, 1950.
Do.	do.	Mvb	2-inch lump.	60 T	1.824.753.9	11.4	3.5	4.5	76.9	1.3	1	Cf	Apr. 7, 1950.
Do.	do.	Mvb	0 by 2-inch.	140 T	2.224.352.9	12.8	2.9	13,200	13,490	12,310	1	Cf	Do.
Barnesboro: Garman No. 5.	Upper Kittanning (C)	Mvb	Run-of-mine	50 T	4.823.351.1	15.6	1.6	4.3	73.6	1.1	1	Cf	Aug. 23, 1948.
Do.	do.	Mvb	do.	317 D	1.726.550.9	12.6	3.0	13,220	13,450	6	Cg	Fiscal year 1948.	
Do.	do.	Mvb	do.	393 D	1.726.451.3	12.3	3.1	13,250	13,480	7	Cg	Fiscal year 1949.	
Beavertide: Conright No. 1	do	Lvb	Modified run-of-mine (70 percent minus- 1½-inch removed).	80 T	2.417.273.1	9.7	2.1	13,770	14,100	12,440	1	Cg	Apr. 8, 1949.
Do.	do	Lvb	Run-of-mine	140 T	2.317.074.0	9.0	1.9	13,870	14,190	12,540	1	Cg	Do.
Do.	do	Lvb	0 by 1½-inch.	50 T	3.918.274.7	7.1	.6	4.4	82.8	1.3	1	Cf	Apr. 4, 1950.
Loydell No. 3	Lower Kittanning (B)	Lvb	Run-of-mine	60 T	1.719.473.7	6.9	1.8	14,370	14,630	12,570	1	Cg	Mar. 31, 1950.
Do.	do	Lvb	3-inch lump.	80 T	4.019.673.4	7.0	1.4	13,990	14,580	12,540	1	Cg	Do.
Do.	do	Lvb	1- by 3-inch (W)	100 T	5.819.274.8	6.0	1.0	13,930	14,790	12,660	1	Cg	Do.
Do.	do	Lvb	¾- by 1-inch (W)	160 T	3.119.071.8	9.2	1.6	13,810	14,250	12,570	1	Cg	Do.
Blandburg: Powell No. 1	Upper Freeport (E)	Mvb	Run-of-mine	65 T	2.626.551.0	12.5	1.2	4.6	76.6	1.3	1	Cg	Apr. 17, 1950.
Do.	do	Mvb	do.	1,860 D	5.026.952.8	10.3	1.0	12,650	13,320	7	{ Cg (2), Cp (2), Cf (1), Af (2)	Fiscal year 1950.	
Do.	do	Mvb	0 by 1½-inch	140 T	3.926.452.9	10.7	.9	12,960	13,470	12,800	1	Cf	Do.
Powell No. 3	Lower Freeport (D)	Hvb	Run-of-mine	600 T	8.627.750.7	11.6	1.3	4.4	74.0	1.3	1	Cp	Apr. 17, 1950.
Do.	do	Mvb	Run-of-mine	119 D	3.425.552.4	12.1	1.3	13,010	13,470	12,520	1	Cg	Fiscal year 1949.
Do.	do	Mvb	Run-of-mine	40 T	2.925.759.0	15.3	1.4	4.4	73.9	1.1	1	Cg	Apr. 17, 1950.
Troxell No. 2	Lower Kittanning (B)	Mvb	do.	1,315 D	1.622.156.4	11.5	1.2	13,520	13,740	24,260	7	Cg (23), Cf (1)	Fiscal year 1949.

* Numbers in parentheses indicate the number of determinations made.

† See Explanation of Symbols (p. 5).

‡ Numbers above 1 indicate the number of deliveries averaged.

Boardman: Earnest Nos. 1 and 2.	Upper and Lower Freeport (E and D).	Mvab	Run-of-mine	T	3.8 24.8 67.1 8.1	1.2	4.7 81.3	1.4	3.3 13.8 21.4 37.0	1,2 680	1	Cg	9+	93	Mar. 31, 1949.
Do.	do.		do.	932 D	4.3 24.2 67.1 8.7	1.0			13.440 14.040	5,2 820	2	Cg (4), Cf (1)			Fiscal year 1950.
Brushin: Hughes No. 7.	Middle Kittanning (C).		0 by 1 1/4-inch.	450 D	6.1 23.3 65.5 11.2	1.8			12.900 13.740	1,2 940	1	Cg			Do.
Caledonia:	Lower Kittanning (B).	Hvab	1 1/4-inch lump.	80 T	2.5 30.3 57.7 12.0	3.6			13.180 13.520	1,2 230	1	Cg			Apr. 22, 1949.
Do.	do.	Hvab	do.	40 T	2.3 30.4 55.6 14.0	3.6			12.830 13.130	1,2 290	1	Cg			June 28, 1950.
Do.	do.	Hvab	0 by 1 1/4-inch.	270 T	4.8 30.2 59.8 10.0	3.1	4.9 76.2	1.3	4.5 13.1 70.13 84.0	1,2 310	1	Cg	8 1/2	60	Apr. 22, 1949.
Do.	do.	Mvab	do.	160 T	2.8 31.7 55.6 12.7	3.1			12.940 13.310	1,2 510	1	Cf	8	73	June 23, 1950.
Carnwath: Elba No. 4.	Lower Freeport (D).	Mvab	Run-of-mine.	350 T	4.8 24.6 65.8 9.6	1.3	4.6 78.9	1.4	4.2 13.3 25.0 13.9 20	1,2 520	1	Cg		93	Apr. 4, 1949.
Clearfield:	Lower Kittanning (B).	Mvab	do.	275 T	3.0 25.1 63.9 11.0	3.3			13.370 13.780	1,2 290	1	Cg	8 1/2	45	June 9, 1950.
Goshen: Town-ship No. 1.	do.		do.	9, 691 D	4.5 23.3 66.2 10.5	1.7			13.100 13.720	21, 2 280	5	Cg (19), Cf (2)			Fiscal year 1950.
Do.	do.		0 by 1 1/4-inch.	308 D	1.6 21.8 64.6 13.6	1.8			13.180 13.400	1,2 710	1	Cg			Do.
Coalport:	Upper and Lower Freeport and Middle Kittanning (E, D and C).		0 by 1 1/4-inch.	220 D	3.0 23.7 61.1 15.2	1.1			12.720 13.110	2, 2 650	2	Cg			Fiscal year 1948.
Nos. 1 and 2.	Lower Kittanning (B).		do.	1, 111 D	7.2 22.8 66.2 11.0	1.2			12.470 13.440	4, 2 590	4	Cg (2), Cf (1), Cp (1)			Fiscal year 1950.
Coal Run Junction: No. 1.															
Militant Smokeless No. 1.															
Curwansville: Penbrook.	Lower Freeport (D).	Mvab	1 1/4- by 6-inch.	35 T	3.1 22.3 67.0 10.7	1.3			13.400 13.830	1,2 680	1	Cg			June 21, 1950.
Do.	do.		0 by 1 1/4-inch.	140 T	4.7 22.3 70.5 6.7	1.0			13.790 14.470	1,2 730	1	Cg	8 1/2	104	Do.
Do.	Upper Freeport (E).	Mvab	3/4- by 2-inch.	35 T	2.0 22.5 62.8 14.7	.7			12.930 13.200	1,2 800	1	Cg			June 20, 1950.
Do.	do.		0 by 3/4-inch.	125 T	3.3 23.5 67.5 9.0	.9			13.700 14.160	1,2 620	1	Cg	8 1/2	95	Do.
Penoyer D.	Lower Freeport (D).	Mvab	1 1/4- by 6-inch.	35 T	2.3 26.0 64.4 9.6	1.5			13.670 13.980	1,2 470	1	Cg			June 21, 1950.
Do.	do.		0 by 1 1/4-inch.	140 T	4.1 25.4 65.9 8.7	1.3			13.460 14.030	1,2 520	1	Cg	8	98	Do.
Shannon Smokeless No. 1.	do.	Mvab	Run-of-mine (crushed to 2-inch).	250 T	2.8 23.8 66.9 9.3	1.5	4.7 79.5	1.3	3.7 13.7 10.14 100	1,2 570	1	Cg	9	98	June 22, 1950.
Tomponson E.	Upper Freeport (E).	Mvab	3/4- by 2-inch.	35 T	3.6 23.0 63.1 13.9	.6			12.530 13.000	1,2 700	1	Cp			June 20, 1950.
Do.	do.		0 by 3/4-inch.	125 T	4.3 24.6 67.0 8.4	.7			13.230 13.830	1,2 570	1	Cp	1 1/2	91	Do.
Warquier No. 1.	do.		Run-of-mine.	3, 299 D	3.2 23.6 66.9 9.9	1.1			13.400 13.900	4, 2 650	3	Cf (1), Cg (3)			Fiscal year 1948.
Do.	do.		0 by 2 1/4-inch.	317 D	4.8 23.8 66.4 9.8	.5			13.130 13.790	2, 2 770	2	Cg			Fiscal year 1949.
Do.	do.		do.	46, 612 D	3.9 24.1 65.9 10.0	1.7			13.280 13.820	103, 2 450	34	Cg (95), Cf (8)			Fiscal year 1950.
Do.	do.		0 by 2 1/4-inch.	731 D	2.2 23.9 65.0 11.1	1.8			13.510 13.810	4, 2 400	3	Cg			Fiscal year 1948.
Do.	do.		do.	500 D	4.9 24.6 64.8 10.6	1.7			13.110 13.780	1,2 470	1	Cg			Fiscal year 1949.
Do.	do.		0 by 1 1/4-inch.	500 D	5.7 23.9 66.4 9.7	1.5			13.020 13.800	1					Do.
Frenchville: Aurora No. 5.	Lower Freeport (D).	Mvab	Run-of-mine	150 T	5.2 25.5 65.9 8.6	1.0			13.290 14.020	1,2 780	1	Cg	7 1/2	83	May 31, 1950.
Do.	do.		0 to 3-inch.	100 T	4.2 26.8 63.3 9.9	2.5			13.330 13.910	1,2 280	1	Cf	8	90	Do.
Aurora No. 6.	do.		Run-of-mine.	100 T	4.9 25.7 63.5 10.8	2.7			13.160 13.830	1,2 280	1	Cg	8	94	Do.
Krolick.	do.		Run-of-mine (crushed to 2 1/4-inch).	16, 964 D	4.8 26.0 65.2 8.8	1.0			13.140 13.800	18, 2 500	3	Cg (13), Cf (5)			Fiscal year 1950.
Grampan: Belfast Nos. 2 and 3.	do.		Run-of-mine.	102 D	4.3 25.3 67.6 7.1	.9			13.680 14.300	1,2 570	1	Cg			Fiscal year 1949.
Manhews No. 7.	do.		Run-of-mine	1, 193 D	6.8 23.2 66.4 10.4	1.7			12.500 13.410	3, 2 440	3	Cp			Fiscal year 1948.
Grassflat: Grassflat No. 1.	Lower Kittanning (B).		do.	7, 349 D	6.6 23.0 68.9 8.1	1.9			13.120 14.050	9, 2 250	8	Cg (6), Cp (2), Af (1)			Fiscal year 1949.
Do.	do.		0 by 2 1/4-inch.	2, 334 D	7.1 23.8 68.4 7.8	1.3			12.750 13.720	16, 2 630	12	Cf (4), Cp (5), Af (3), Aw (1), NAb (3)			Fiscal year 1948.
Do.	do.		0 by 1 1/2-inch.	66 D	4.7 38.5 50.8 10.7	2.6			12.290 12.910	1,2 320	1	Cp			Do
Do.	do.		do.	282 D	8.3 24.5 68.4 7.1	.8			12.400 13.520	3, 2 770	3	Af			Do
Hevelly: Cammas No. 1.	Lower Freeport (D).		Run-of-mine (crushed to 3/4-inch).	5, 400 D	2.1 22.7 65.5 11.8	1.1			13.360 13.650	13					Do.
Do.	do.		do.	7, 934 D	2.6 22.9 64.4 12.7	1.0			13.170 13.520	11					Fiscal year 1949.
Do.	do.		0 by 3/4-inch.	7, 335 D	4.0 21.8 67.9 10.3	.8			13.360 13.920	2, 2 910	2	Cg			Do.

* Numbers in parentheses indicate the number of determinations made.

† Numbers above 1 indicate the number of symbols averaged.

‡ See Explanation of Symbols (p. 6).

TABLE 3.—Analyses of tippie and delivered samples during the fiscal years 1948-50—Continued

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19	20	21	22	23	24		
															Moisture, as-received coal	Volatile matter										
County, town, and mine	Bed	Rank	Size of coal	Approximate tons sampled	Kind of sample	Proximate, percent				Ultimate, percent						Calorific value		Number of analyses	Ash-softening temperature, °F.	Number of ash-softening temperatures	Agglomerating index ^{1,2}	Free-swelling index	Hardgrove grindability index	Date		
						Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis												
CLEARFIELD COUNTY—continued																										
Hollywood:																										
B & M.....	Lower Kittanning (B)	Hvab	Run-of-mine.....	200 T	1.6	32.9	58.0	9.1	3.1	5.0	77.5	1.3	4.0	13.7	20	13,850	12,210	1				8	71	June 27, 1950.		
Micale No. 13.....	do.	Hvab	do.	80 T	2.5	33.2	56.8	10.0	4.0	5.0	76.4	1.5	3.1	13.5	19	13,850	12,150	1				8½	83	June 30, 1950.		
Proctor No. 2.....	do.	Hvab	do.	380 T	2.31	0.98	81.0	2.3	3.4	4.9	76.6	1.2	3.7	13.6	19	13,900	12,210	1				8	86	June 27, 1950.		
Tyler Run.....	do.	Hvab	do.	80 T	2.8	31.0	58.1	10.9	3.6	5.1	75.7	1.2	3.5	13.2	19	13,640	12,130	1				8	81	June 30, 1950.		
Janesville:																										
King No. 1.....	Upper Freeport (E)	Mvb	do.	300 T	2.0	24.5	65.8	9.7	1.0	4.7	79.6	1.4	3.6	13.8	20	14,100	12,620	1				9+	87	Mar. 29, 1949.		
Do.....	do.	do.	do.	100 D	7.24	6.66	4.9	0.1	1.1	1.1	1.1	1.1	1.1	1.1	19	14,090	12,490	1						Fiscal year 1949.		
Do.....	do.	do.	do.	109 D	3.1	25.7	65.7	8.6	1.1	1.1	1.1	1.1	1.1	1.1	20	14,160	13,720	2						Fiscal year 1950.		
Karhouse:																										
Harrington No. 1.....	Lower Kittanning (B)	Mvb	do.	150 T	5.4	21.7	65.7	12.6	2.5	4.3	75.5	1.3	3.8	12.5	19	13,270	12,470	1						Nov. 7, 1947.		
Do.....	do.	do.	do.	524 D	2.4	23.2	63.0	13.8	2.8	2.8	2.8	2.8	2.8	19	13,230	12,910	9							Fiscal year 1949.		
Do.....	do.	do.	do.	52 D	2.2	22.5	66.8	10.7	2.7	2.7	2.7	2.7	2.7	19	13,770	13,460	1							Fiscal year 1950.		
Do.....	do.	do.	do.	45 D	1.4	21.9	67.0	11.1	2.3	2.3	2.3	2.3	2.3	19	13,780	13,590	1							Fiscal year 1949.		
Do.....	do.	do.	do.	272 D	10.9	24.5	63.0	12.5	1.7	1.7	1.7	1.7	1.7	20	12,700	11,320	2							Fiscal year 1948.		
Do.....	do.	do.	do.	2,953 D	6.0	23.4	64.3	12.3	2.2	2.2	2.2	2.2	2.2	3	13,120	12,330	3							Fiscal year 1949.		
La Jose: G & S No. 3.....	Lower Freeport (D)	Mvb	Run-of-mine.....	180 T	1.7	26.9	61.8	11.3	2.0	2.0	2.0	2.0	2.0	19	13,680	13,450	1						8½	85	June 8, 1950.	
Madera:																										
Alexander.....	Brookville (A)	do.	Run-of-mine (crushed to 1¼-inch).	319 D	5.2	21.0	63.8	15.2	2.1	2.1	2.1	2.1	2.1	19	12,900	12,280	3								Fiscal year 1948.	
Echo Run No. 3.....	Upper Freeport (E)	Mvb	Run-of-mine.....	350 T	3.4	23.0	65.1	11.9	1.2	4.5	77.5	1.4	3.5	13.2	20	13,710	12,570	1						9	89	Apr. 7, 1949.
Do.....	do.	do.	do.	211 D	4.5	21.8	65.6	12.6	1.9	1.9	1.9	1.9	1.9	19	13,430	12,830	3								Fiscal year 1948.	
Do.....	do.	do.	do.	158 D	3.9	22.2	66.7	11.1	1.9	1.9	1.9	1.9	1.9	19	13,700	13,170	3								Fiscal year 1949.	
Seekinger No. 1.....	Lower Kittanning (B)	Lvb	do.	125 T	2.2	20.4	69.9	9.7	1.2	4.5	80.1	1.1	3.4	13.8	20	14,170	12,680	1						9+	107	Mar. 30, 1949.
Morrisdale:																										
Cooper Smokeless No. 2.....	do.	do.	do.	228 D	4.4	23.5	66.8	9.7	2.8	2.8	2.8	2.8	2.8	19	13,850	13,240	3								Fiscal year 1948.	
Do.....	do.	do.	do.	173 D	3.6	22.8	66.7	10.5	2.1	2.1	2.1	2.1	2.1	20	13,730	13,240	2								Fiscal year 1949.	
Do.....	do.	do.	do.	82 D	2.2	25.6	64.7	9.7	2.1	2.1	2.1	2.1	2.1	19	14,050	13,740	2								Fiscal year 1950.	
Do.....	do.	do.	do.	5,001 D	4.6	23.8	65.9	10.3	1.7	1.7	1.7	1.7	1.7	19	13,800	13,170	3								Do.	
Munson: Krist No. 5.....	Lower Kittanning (B)	Mvb	Run-of-mine.....	100 T	2.3	23.4	65.6	11.0	3.5	4.6	77.7	1.3	1.9	13.5	20	13,850	12,310	1						9+	9+	Aug. 17, 1948.
Osceola Mills:																										
Curtin Nos. 1 and 2.....	do.	do.	2-inch lump.....	102 D	2.1	23.1	68.2	8.7	1.9	1.9	1.9	1.9	1.9	19	14,089	13,780	2								Fiscal year 1950.	
Do.....	do.	do.	0 by 2-inch.....	5,203 D	5.3	23.1	64.1	12.8	2.5	2.5	2.5	2.5	2.5	19	13,480	12,770	3								Do.	
Do.....	do.	do.	0 by 1¼-inch.....	2,482 D	5.2	23.1	64.7	12.2	2.3	2.3	2.3	2.3	2.3	19	13,600	12,890	4								Do.	
Do.....	do.	do.	0 by ¾-inch.....	1,133 D	4.0	23.5	67.4	9.1	1.7	1.7	1.7	1.7	1.7	19	14,260	13,690	1								Do.	
Henrietta No. 6.....	Upper Freeport (E)	do.	Run-of-mine.....	315 D	3.5	23.8	63.1	13.1	3.0	3.0	3.0	3.0	3.0	19	13,460	12,990	1								Fiscal year 1949.	

PENNSYLVANIA—Continued

Bituminous—Continued

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample No.	Run-of-mine	T	4.231-5.553	13.2	2.4	4.772	2.15	6.0	12.400	12.950	12.540	7 1/2	65	Aug. 22, 1949.	
Indiana County	Avonmore: Peretto No. 1	Run-of-mine	100	2.826	0.601	13.9	2.0	4.775	1.3	3.0	12.910	13.280	9	85	Sept. 14, 1948.	
	Black Lick: Keller	do.	10	1.928	3.599	11.8	2.8			13.410	13.670	12.260			June 2, 1949.	
	Ernest	2-by 5-inch (W)	50	2.929	4.610	9.6	2.0			13.600	14.000	12.520			Do.	
	Do.	1/4-by 2-inch (W)	200	3.429	2.617	9.1	2.0	5.0	79.2	1.4	3.3	13.640	110	8 1/2	Do.	
	Do.	0 by 1/4-inch (A.C.)	650	1.825	6.567	17.7	1.8	4.3	70.8	1.2	4.2	12.310	12.540	5	May 17, 1949.	
	Glen Campbell: Banks No. 2	Run-of-mine	70	3.228	6.614	10.0	.7			13.480	13.920	12.910+	8		May 24, 1950.	
	Summit No. 16	Run-of-mine (crushed to 2 1/2-inch)	200	2.523	0.868	10.2	1.1			13.610	13.950	12.800	8 1/2	95	May 12, 1950.	
	Heshbon: Heshbon No. 2	Run-of-mine	250	1.724	0.861	9.9	3.5			13.720	13.960	4			Fiscal year 1948.	
	Virginia No. 14	1-inch lump	103	2.223	5.653	11.2	3.5			13.410	13.710	7			Fiscal year 1949.	
	Do.	do.	583	2.122	8.652	12.0	5.2			13.260	13.540	2			Fiscal year 1950.	
	Do.	do.	110	5.627	6.631	9.3	1.4			13.220	14.000	12.560			Fiscal year 1949.	
	Hillman: Clover Run	Run-of-mine (crushed to 2-inch)	154	3.828	2.388	13.0	1.1			12.310	12.800	12.680			Fiscal year 1948.	
	Do.	0 by 2-inch	361	3.927	7.638	8.5	1.1			13.390	13.930	12.440			Fiscal year 1949.	
	Do.	0 by 1 1/4-inch	101	4.927	0.618	11.2	2.2			12.880	13.550	12.430			Fiscal year 1950.	
	Do.	do.	684	6.328	2.579	13.9	1.7			12.180	13.000	12.470			Do.	
	Homer City: Appalachia	1/4-by 1 1/4-inch	138	2.328	9.565	14.6	2.4			12.670	12.970	22.350			Do.	
	Do.	1/4-by 3/4-inch	806	2.126	4.649	8.7	3.2	4.8	79.2	1.2	2.9	13.900	14.200	9	104	May 16, 1950.
	Do.	Run-of-mine (crushed to 2 1/2-inch)	220	2.526	4.644	9.2	3.3			13.790	14.140	22.260			Fiscal year 1950.	
	Krottek No. 1	1/4-by 1-inch	97	1.525	4.617	12.9	5.8			13.190	13.400	1			Do.	
	Do.	1/2-by 1-inch	48	2.527	5.612	11.3	2.7			13.370	13.710	12.180			Do.	
	Do.	2-by 5-inch (W)	50	3.327	9.613	10.8	2.1			13.340	13.800	12.450			Do.	
	Do.	1-by 2-inch (W)	100	1.628	1.628	9.1	1.5			13.890	14.110	12.570			Do.	
	Do.	3/4-by 1-inch (W)	200	1.928	9.636	7.5	1.4			14.120	14.390	12.550			Do.	
	Do.	0 by 1-inch (W)	250	1.628	7.643	7.0	1.4	5.0	81.4	1.5	3.7	14.270	14.500	9	90	Do.
	Do.	0 by 3/8-inch (W)	300	3.928	2.609	10.9	2.0	4.7	76.7	1.3	4.4	13.170	13.700	8 1/2	76	Apr. 26, 1949.
	Do.	Run-of-mine	325	2.229	0.587	12.3	1.2			13.220	13.520	12.750			June 1, 1949.	
	McIntyre: Kent Nos. 1 and 2	2-by 4-inch (W)	120	2.830	4.609	8.7	1.1			13.790	14.190	12.800			Do.	
	Do.	3/4-by 2-inch (W)	120	1.930	4.611	8.5	1.2			13.940	14.210	12.750			Do.	
	Do.	1/4-by 3/4-inch (W)	380	2.430	7.623	7.0	1.4	5.1	80.8	1.5	4.2	14.050	14.390	9	75	Do.
	Do.	0 by 1/4-inch	800	3.229	2.597	11.1	1.6			13.130	13.560	12			Fiscal year 1950.	
	Rossiter: Rossiter	Run-of-mine (crushed to 2 1/2-inch)	4,023	4.628	8.607	10.5	1.7			12.990	13.620	12.200			Do.	
	Do.	0 by 2 1/2-inch	5,584	2.528	5.585	13.5	2.7			12.600	13.190	15.220			Do.	
	Do.	0 by 1 1/4-inch	1,789	3.032	5.523	15.2	2.3			12.480	12.860	1			Fiscal year 1949.	
	Salsburg: Leeman Sides: Red Lands Nos. 10 and 11	Run-of-mine (crushed to 2-inch)	205	3.622	8.681	9.1	1.5			13.560	14.090	2			Fiscal year 1948.	
	Urey: Lamke Bros. No. 1	Run-of-mine	220	2.727	9.626	9.5	1.3	4.9	78.5	1.5	4.3	13.560	13.940	9	75	May 16, 1949.
	Do.	0 by 2-inch	11,632	2.427	8.615	10.7	1.3			13.380	13.710	18,250	7		Fiscal year 1950.	
	Jefferson County: Brookway: Lyle No. 1	Run-of-mine	48	3.927	6.601	12.3	1.3			12.610	13.140	1			Fiscal year 1949.	
	Do.	0 by 1 1/4-inch	117	3.630	6.658	13.6	1.3			12.670	13.140	1,270	1		Fiscal year 1948.	
	Do.	2-by 5-inch	283	2.735	6.550	9.4	9			13.440	13.810	3			Fiscal year 1950.	
	Do.	1-by 7-inch	196	2.236	5.658	7.7	1.2			13.720	14.030	3			Do.	

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tippie and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent		Ultimate, percent						Calorific value		Number of analyses ²	Ash-softening temp., ° F.	Number of ash-softening temperatures ³	Agglomerating index ^{1,4}	Free-swelling index	Hardgrove grindability	Date	
						Moisture as received	Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as received basis								B. t. u., dry basis
PENNSYLVANIA—Continued																							
Bituminous—Continued																							
JEFFERSON COUNTY—continued																							
Corsica: Roseville No. 1.	Lower Kittanning (B).	Hvab	Run-of-mine	40 T	4.0	34.1	54.4	11.5	1.6	4.9	74.2	1.3	6.5	12,820	13,340	1	2,600	1	Cf	7½	53	May 6, 1949.	
Falls Creek: Minnis	Lower Freeport (D).	Hvab	Run-of-mine (crushed to 2-inch).	290 T	4.3	32.4	55.7	11.9	.8	4.8	74.9	1.5	6.1	12,740	13,310	1	2,840	1	Cf		53	Nov. 17, 1947.	
Do.	Upper and Lower Freeport (E and D).		Run-of-mine (crushed to 1½-inch).	461 D	2.7	32.7	58.6	8.7	.9					13,180	13,550	3			{ Cg (1), Cf (1), Cp (1) }		95	Fiscal year 1950.	
Ohl: Nancy	Lower Kittanning (B).		Run-of-mine (crushed to 2½-inch).	50 D	2.3	33.7	52.8	13.5	3.9					12,720	13,010	1			Cf		95	Fiscal year 1949.	
Do.	do.		0 by 2½-inch.	1,705 D	5.6	31.8	54.5	13.7	1.1					12,190	12,910	9			{ Cg (6), Cf (4), Cp (3) }		76	Fiscal year 1950.	
Punxsutawney: Meadow Nos. 1, 2, 3, and 4.	Upper Kittanning (C).	Mvab	Run-of-mine.	200 T	3.1	28.2	63.6	8.2	.9					13,680	14,110	1	2,890	1	Cg	8	53	June 7, 1950.	
Timblin: Ringgold preparation plant.			do.	583 D	2.9	39.0	53.4	7.6	2.2					13,570	13,970	1			Cf		95	Fiscal year 1950.	
Westville: Bloom No. 1.			½- by 1¾-inch.	30 T	2.8	34.0	54.0	12.0	2.6	4.9	74.3	1.3	4.9	13,000	13,380	1	2,410	1	Cg	8	53	May 13, 1949.	
Lundblad	Lower Freeport (D).	Hvab	Run-of-mine.	676 D	5.7	28.1	63.3	8.6	1.2					12,790	13,560	2			Cp		95	Fiscal year 1949.	
Westville No. 4.	Lower Kittanning (B).	Hvab	do.	120 T	3.2	34.2	63.3	12.5	2.7	4.9	74.0	1.5	4.4	12,930	13,350	1	2,360	1	Cf		95	Nov. 12, 1947.	
SOMERSET COUNTY																							
Acosta: Consolidation Nos. 120 and 121.	Upper Kittanning and Upper Freeport (C and E).		do.	19,053 D	2.1	18.5	68.9	12.6	1.7					13,270	13,550	22	2,590	22	Cg		95	Fiscal year 1948.	
Adams:																							
Florence No. 1C Prime.	Upper Kittanning (C).	Lvab	Run-of-mine (crushed to 2½-inch).	270 T	5.0	17.2	69.7	13.1	2.1	4.1	76.8	1.3	2.6	12,760	13,440	1	2,420	1	Cf		95	Oct. 29, 1947.	
Florence No. 1D.	Lower Freeport (D).	Lvab	Run-of-mine (crushed to 3-inch).	235 T	3.8	17.3	70.9	11.8	.6	4.3	78.7	1.3	3.3	13,160	13,680	1	2,850	1	Cg		95	Sept. 19, 1947.	
Berlin: Poncefagh Pine Hill.	Pine Hill No. 2.	Lvab	Run-of-mine.	100 T	2.8	19.7	69.1	11.2	1.6	4.4	78.7	1.7	2.4	13,460	13,850	1	2,660	1	Cg	9+	95	July 7, 1949.	
Do.	do.		do.	581 D	3.6	19.8	67.7	12.5	1.9					13,040	13,520	1			Cg		95	Fiscal year 1948.	
Do.	do.		do.	1,842 D	3.7	20.4	67.0	12.6	2.0					13,070	13,570	5	2,500	5	Cg		95	Fiscal year 1949.	
Do.	do.		do.	13,057 D	3.2	20.1	68.0	11.9	1.8					13,210	13,650	18	2,510	18	Cg		95	Fiscal year 1950.	
Ralphston No. 2.	Upper Freeport (E).	Lvab	do.	35 T	2.6	18.8	69.6	11.6	1.4	4.3	78.7	1.4	2.6	13,390	13,750	1	2,750	1	Cg	9+	100	Aug. 8, 1949.	
Will No. 2.	do.	Lvab	do.	100 T	2.9	18.8	68.2	13.0	1.4	4.3	77.0	1.4	2.9	13,150	13,550	1	2,770	1	Cg	9+	100	Do.	
Boswell: Fetterolf.	Lower Kittanning and Upper Freeport (B and E).		do.	906 D	2.1	17.6	71.7	10.7	2.2					13,610	13,900	2	16,230	2	Cg		95	Fiscal year 1949.	

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Do.	do.	do.	do.	D	3.7	18.5	71.7	9.8	.7	13,140	13,640	8,2870	Cg (3), Cf (1), Cp (1), NAb (1), NAb (2)	Fiscal year 1950.	
Do.	do.	do.	0 by 1 1/4-inch.	2,419 D	6.2	18.4	70.3	11.3	1.6	12,590	13,420	7,2370	Cg (2), Cf (1), Cp (2), Af (1), NAb (1)	Do.	
Wallet	Lower Kittanning (B).	Lvb	Run-of-mine.	25 T	3.0	18.5	69.6	11.9	2.9	1.9	13,320	13,730	Cg	Mar. 14, 1950.	
Cairbrook: Shade	Upper Kittanning (C)	Lvb	do.	2,500 D	1.1	17.9	67.6	14.5	1.1	12,890	13,080	1,2590	Cp	Fiscal year 1948.	
Troy No. 10	Lower Kittanning (B).	Lvb	do.	390 D	2.2	16.7	68.9	14.4	2.1	12,840	13,130	5	Cf (4), Cp (1)	Fiscal year 1950.	
Do.	Upper Freeport (E).	Lvb	0 by 1 1/4-inch.	98 D	2.0	19.4	71.1	9.5	1.2	13,840	14,120	1,2660	Cg	Fiscal year 1949.	
Coleman: Troy No. 10E.	Upper Kittanning (C).	Lvb	do.	420 D	2.5	20.0	69.5	10.5	1.5	13,570	13,920	2,2520	Cg	Fiscal year 1950.	
Garratt: Fonteign No. 1.	Upper Kittanning (C).	Lvb	Run-of-mine.	100 T	3.7	17.8	70.6	11.6	2.1	2.2	13,220	13,720	1,2660	Cg	July 12, 1949.
Do.	Sewickley	Lvb	do.	8,145 D	3.5	18.4	69.2	12.4	2.4	13,070	13,540	14,2650	Cg (13), Cf (1)	Fiscal year 1950.	
Fonteign (strip)	Fine Hill No. 2	Lvb	do.	50 T	3.2	21.6	69.2	9.2	1.1	4.0	13,560	14,040	Cg	July 11, 1949.	
Fonteign No. 6	Redstone	Lvb	do.	30 T	3.0	20.3	66.7	13.0	1.9	3.1	13,080	13,490	Cg	July 18, 1949.	
Fonteign No. 7B	do.	Lvb	do.	1,207 D	4.2	19.4	61.8	18.8	3.5	11,890	12,410	1,2420	Cg	Fiscal year 1949.	
Do.	do.	Lvb	2 1/2-inch lump	623 D	1.9	19.5	66.7	13.8	2.7	13,040	13,290	6,2520	Cg	Do.	
Fonteign Smokeless No. 1.	Fine Hill No. 2	Lvb	Run-of-mine.	25 T	3.5	20.7	67.7	11.6	1.5	2.7	13,280	13,760	1,2650	Cg	July 13, 1949.
Do.	do.	Lvb	do.	1,485 D	4.0	20.9	66.3	12.8	1.9	12,890	13,430	7,2510	Cg	Fiscal year 1948.	
Harrison: Harrison No. 2.	Upper Kittanning (C).	Lvb	do.	220 T	2.7	17.8	71.7	11.1	2.8	2.1	13,540	13,920	1,2360	Cg	Mar. 7, 1950.
Do.	Upper Freeport (E).	Lvb	do.	120 T	2.7	19.5	69.0	11.5	1.2	2.9	13,420	13,800	1,2680	Cg	Do.
Holsopple: Shade Creek No. 5.	Upper Kittanning (C).	Lvb	do.	60 T	2.5	16.2	74.3	9.5	1.5	4.2	81.2	14,110	1,2600	Cg	Mar. 17, 1950.
Do.	do.	Lvb	do.	153 D	2.6	16.4	72.1	11.5	2.2	13,430	13,780	1,2420	Cg	Fiscal year 1949.	
Swank No. 15	Lower Kittanning (B).	Lvb	Run-of-mine (crushed to 2-inch).	200 T	1.8	16.8	72.8	10.4	2.9	13,680	13,930	1,2360	Cg	Mar. 9, 1950.	
Swank No. 19	do.	Lvb	Run-of-mine.	100 T	2.3	16.4	73.0	10.6	3.2	13,620	13,930	1,2230	Cg	Mar. 10, 1950.	
Do.	do.	Lvb	0 by 1 1/4-inch.	52 D	1.5	16.4	75.1	8.5	2.6	14,080	14,290	1,2420	Cg	Fiscal year 1949.	
Hooversville: Knickerbocker No. 4.	Lower Kittanning (B).	Lvb	Run-of-mine.	7,681 D	2.8	17.1	69.6	13.3	2.1	12,980	13,350	6,2450	Cg	Fiscal year 1949.	
Do.	do.	Lvb	3-inch lump	25 T	2.3	18.6	68.6	14.8	3.0	12,920	13,220	1,2340	Cg	Mar. 16, 1950.	
Do.	do.	Lvb	0 by 3-inch.	480 T	2.5	18.9	71.9	11.6	2.1	2.2	13,360	13,700	1,2420	Cg	Do.
Do.	do.	Lvb	0 by 2 1/2-inch.	45,892 D	2.4	18.9	70.8	12.3	2.1	4.1	78.7	13,370	37,2410	Cg	Fiscal year 1949.
Do.	do.	Lvb	do.	46,891 D	2.3	18.3	71.7	11.5	1.8	13,420	13,740	54,2420	Cg	Fiscal year 1950.	
Do.	do.	Lvb	do.	300 T	8.4	18.3	73.2	8.5	1.7	4.3	81.4	14,210	1,2470	Cf	Mar. 27, 1950.
Do.	do.	Lvb	Run-of-mine.	620 T	2.3	16.3	72.4	11.3	1.1	13,460	13,780	1,2750	Cg	May 1, 1950.	
Jerome No. 1	Upper Kittanning (C).	Lvb	do.	110 T	2.1	18.3	72.3	11.4	2.9	13,350	13,640	1,2230	Cg	Do.	
Jerome No. 2	Upper Freeport (E).	Lvb	do.	210 D	2.3	19.2	70.0	10.8	2.2	13,650	13,970	3	Cg	Fiscal year 1950.	
Kantner: Fairview	Upper Kittanning (C).	Lvb	do.	5 T	2.3	18.6	71.4	10.0	2.2	2.1	13,660	13,970	1,2420	Cg	Apr. 14, 1949.
Lambertsville: Alumbaugh No. 1.	Upper Kittanning (C).	Lvb	do.	405 D	2.2	18.9	74.8	6.3	.7	14,400	14,720	2,2900	Cg	Fiscal year 1949.	
Listie: Denise	Upper Kittanning and Lower Freeport (C' and D).	Lvb	0 by 1 1/4-inch.	6,893 D	3.3	18.7	74.5	6.8	.7	14,060	14,540	18,2900	Cg (16), Cf (1), Cp (1)	Fiscal year 1950.	
Do.	do.	Lvb	do.	3,471 D	7.4	20.5	67.8	11.7	1.6	12,370	13,360	8,2120	Cf (2), Cp (3), Af (3)	Do.	
Macondalton: Comstock	Brush Creek	Lvb	do.	150 T	3.0	17.6	67.8	14.6	2.9	4.1	74.8	13,170	1,2500	Cg	July 26, 1949.
Sourfield	Lower Kittanning (B).	Lvb	Run-of-mine.	52 D	1.2	17.4	64.0	18.6	2.6	12,300	12,640	1,2600	Cg	Fiscal year 1949.	
Troy No. 5C	do.	Lvb	0 by 1 1/4-inch.												

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPLLE AND DELIVERED SAMPLES OF COAL

Location	Sample Description	212	D	3.0	37.0	52.2	10.8	2.4	12,920	13,310	1,2,360	1	CF	Fiscal Year	Notes	
Bridgeville: May-view	0 by 1½-inch															
Primrose Nos. 2 and 4	4- by 6-inch	116	D	3.1	40.5	49.8	9.7	1.2	13,050	13,460	1		CF	Do.		
Do.	2¼- by 6-inch	4,133	D	2.9	38.5	55.2	6.3	1.3	13,610	14,020	5		CF	Do.		
Do.	2- by 6-inch	151	D	2.8	38.9	51.4	9.7	1.7	13,020	13,400	2		CF	Do.		
Do.	0 by 2¼-inch	5,260	D	4.4	35.0	51.2	13.8	1.9	12,060	12,620	10		CF	Fiscal year 1949.		
Do.	do	7,250	D	6.0	35.5	50.5	13.9	2.4	11,830	12,580	4		CF	Dec. 19, 1949.		
Primrose No. 4	4-inch lump															
Do.	2¼- by 4-inch	70	T	3.3	40.6	53.6	5.8	1.5	7.6	13,600	14,070	1		CF	Do.	
Do.	0 by 2¼-inch	120	T	3.3	38.8	52.0	8.4	1.4	13,160	13,620	12,590	1		CF	7	
Burgestown: Florence	5-inch lump	300	T	3.9	40.7	51.5	7.8	1.8	5.2	13,140	13,670	1		CF	Dec. 12, 1949.	
Do.	2- by 5-inch	250	T	4.2	38.3	51.4	10.3	1.9	12,660	13,220	12,570	1		CF	Do.	
Do.	0 by 2-inch	250	T	5.5	35.2	50.0	14.8	2.4	11,830	12,510	12,360	1		CF	6½	
Canonburg: Magnolia	2¼-inch lump	50	T	3.0	40.2	54.4	5.4	1.7	5.4	13,740	14,160	1		CF	Dec. 14, 1949.	
Do.	¾- by 2¼-inch	30	T	3.0	38.5	52.9	8.6	2.3	13,220	13,620	12,080	1		CF	Do.	
Do.	¾- by 1½-inch	10	T	3.3	37.9	51.5	10.6	2.7	12,830	13,270	12,080	1		CF	Do.	
Do.	0 by ¾-inch	20	T	5.2	35.8	50.9	13.3	3.0	12,130	12,790	12,130	1		CF	7	
Do.	0 by ¾-inch	1,042	D	7.0	33.3	50.0	16.6	2.0	11,290	12,140	12,030	1		CF	Fiscal year 1949.	
Eldersville: Sasso No. 1	4-inch lump	60	T	2.9	43.2	52.2	4.6	2.2	5.4	13,730	14,140	1		CF	Sept. 7, 1948.	
Do.	2½- by 2-inch (W)	550	T	3.1	42.7	50.8	6.5	3.5	3.3	13,800	14,330	1		CF	Aug. 2, 1949.	
Do.	1¼- by 1½-inch (W)	350	T	6.4	41.9	49.6	8.5	3.6	12,860	13,490	12,100	1		CF	Do.	
Do.	¾- by 1½-inch (W)	200	T	6.4	42.0	50.3	7.7	3.3	12,700	13,570	12,080	1		CF	Do.	
Do.	0 by 4-inch	300	T	3.7	37.7	46.2	16.1	3.7	11,790	12,240	12,150	1		CF	Sept. 7, 1948.	
Do.	0 by ¾-inch	200	T	6.5	32.8	42.3	24.9	4.6	10,120	10,820	2,130	1		CF	Aug. 2, 1949.	
Do.	0 by ¾-inch	163	D	2.6	32.2	51.8	13.0	2.3	12,530	12,860	1		CF	Fiscal year 1949.		
Houston: Joyce	Run-of-mine	300	T	3.8	39.3	48.5	12.2	4.5	4.9	12,450	12,910	1		CF	Aug. 3, 1949.	
Do.	8-inch lump	50	T	2.9	42.4	51.3	6.3	2.0	7.1	13,590	13,990	1		CF	Sept. 8, 1948.	
Do.	0 by 8-inch	350	T	4.1	37.4	47.5	15.1	2.7	12,030	12,540	12,420	1		CF	Do.	
Midway: Dickson	2½-inch lump	255	T	4.6	35.7	52.0	12.3	1.8	6.8	13,180	13,760	1		CF	Jan. 16, 1950.	
Do.	0 by 2½-inch	170	T	9.3	33.7	52.0	12.3	1.8	11,750	13,000	12,570	1		CF	Do.	
Washington: Country Club	4-inch lump	70	T	2.8	39.5	55.5	5.0	1.5	6.8	13,940	14,350	1		CF	Jan. 11, 1950.	
Do.	2- by 4-inch	40	T	3.3	36.5	54.0	9.4	1.8	13,080	13,550	12,470	1		CF	Do.	
Do.	1¼- by 2-inch	40	T	4.3	34.6	52.0	12.8	2.0	12,440	13,000	12,390	1		CF	Do.	
Do.	¾- by 1½-inch	45	T	6.0	33.3	51.7	13.9	2.9	11,920	12,680	12,440	1		CF	Do.	
Do.	0 by ¾-inch	45	T	10.3	31.0	50.8	18.2	3.3	10,830	12,080	12,580	1		CF	Do.	
Do.	Run-of-mine (crushed to 2-inch)	192	D	4.6	35.5	53.5	11.0	2.3	12,570	13,180	3,2,180	1		CF	Fiscal year 1949.	
Do.	3½-inch lump	80	T	2.8	39.9	54.9	5.6	2.1	5.4	13,730	14,110	1		CF	Jan. 9, 1950.	
Do.	2- by 5-inch	745	D	3.0	36.8	53.3	9.9	1.7	13,010	13,410	5		CF	Fiscal year 1949.		
Do.	0 by 5-inch	130	T	2.9	38.1	53.4	8.5	1.9	13,220	13,610	12,160	1		CF	Jan. 9, 1950.	
Do.	1¼- by 2-inch	50	T	3.1	37.2	52.8	10.0	1.9	12,960	13,370	12,470	1		CF	Do.	
Do.	0 by 2-inch	890	D	4.1	36.2	53.4	10.4	2.1	12,740	13,330	7,2,470	3		CF	Fiscal year 1949.	
Do.	0 by 1¼-inch	140	T	5.2	36.4	53.3	10.3	2.1	12,360	13,280	12,130	1		CF	Jan. 9, 1950.	
Do.	do	566	D	4.8	35.0	52.7	12.3	2.4	12,360	12,980	5		CF	Fiscal year 1949.		
WESTMORELAND COUNTY																
Apollo: Shafter	Run-of-mine	20	T	2.7	34.8	56.0	9.2	2.4	13,380	13,750	12,100	1		CF	May 10, 1950.	
Bellvar: Eilen No. 1	do	35	T	2.0	23.5	64.8	11.7	2.6	13,440	13,710	12,150	1		Cg	Mar. 22, 1950.	
Fort Palmer: F. A. R. No. 1	¾- by 1¼-inch	74	D	6.0	22.4	68.4	8.2	.8	12,410	13,210	1		NAb	Fiscal year 1948.		
Hestetter: Jamison No. 21	do	139	D	1.8	29.1	59.3	11.6	1.4	13,350	13,590	3		Cg	Fiscal year 1950.		
Humber: Delmont No. 10	3- by 4-inch	56	D	1.4	32.1	57.5	10.4	2.1	13,570	13,760	12,260	1		Cg	Fiscal year 1949.	
Do.	2- by 5-inch (W)	150	T	2.5	33.0	60.2	6.8	1.8	14,040	14,400	12,130	1		Cg	July 26, 1949	
Do.	1¼- by 5-inch	2,325	D	1.5	32.3	59.0	8.7	2.1	13,810	14,020	5		Cg	Fiscal year 1950.		
Do.	do	150	T	2.6	33.0	60.3	6.7	1.8	4.9	14,000	14,380	1		Cg	July 26, 1949	
Do.	1¼- by 2-inch (W)	132	D	2.1	32.5	59.6	7.9	1.6	13,920	14,220	2,2,150	1		Cg	Fiscal year 1950.	
Do.	do	68	D	1.8	32.9	59.6	7.5	1.6	13,980	14,250	12,260	1		Cg	Do.	

Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank	Size of coal	Approximate tons sampled	Kind of sample	Proximate, percent		Ultimate, percent						Calorific value		Number of analyses	Ash-softening temperature, F.	Number of ash-softening temperatures	Agglomerating index ¹	Free-swelling index	Hardgrove grindability index	Date
						Moisture as-received coal	Volatile matter	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis							
PENNSYLVANIA—Continued																						
Bituminous—Continued																						
WESTMORELAND COUNTY—continued																						
Hunker—Cont.																						
Delmont No. 10.	Upper Freeport (E).		¼- by 1¼-inch (W)	400	T	4.1	32.9	60.2	6.9	1.6												July 26, 1949.
Do.	do.		¼- by 1¼-inch.	8, 120	D	2.1	33.1	59.6	7.3	1.6												Fiscal year 1950.
Do.	do.		0 by 1½-inch.	70	D	2.4	32.1	58.3	9.6	2.0												Do.
Do.	do.		0 by 1¼-inch.	220	D	3.9	31.4	59.9	8.7	1.9												Fiscal year 1940.
Do.	do.		do.	10, 375	D	2.6	32.2	58.9	8.9	1.8												Fiscal year 1959.
Do.	do.		do.	400	T	3.8	31.9	58.9	9.2	1.8												Do.
Do.	do.		0 by ¼-inch.	220	T	2.4	33.6	57.7	8.7	3.2	5.1	77.4	1.5	4.1	13,440	13,970	16,230	1	9	72	July 26, 1949.	
Do.	do.		Run-of-mine.	220	T	1.8	33.4	58.4	8.2	2.1	5.1	78.6	1.4	4.6	13,860	14,120	15,310	1	8	77	May 4, 1950.	
Do.	do.		do.	200	T	1.8	33.4	58.4	8.2	2.1	5.1	78.6	1.4	4.6	13,860	14,120	15,310	1	8	77	Do.	
Do.	do.		do.	300	T	3.5	35.5	62.6	11.9	2.8	5.0	73.8	1.4	5.1	13,040	13,370	15,100	1	6	62	Oct. 13, 1948.	
Do.	do.		do.	200	T	3.8	32.9	55.4	11.7	1.6	4.9	73.5	1.6	6.7	12,660	13,160	15,570	1	7	60	June 9, 1949.	
Do.	do.		do.	150	T	2.3	28.0	58.5	13.5	2.4	4.5	75.2	1.6	2.8	13,030	13,340	15,460	1	1		Oct. 10, 1947.	
Do.	do.		do.	117	D	1.5	32.0	58.7	9.3	2.6												Fiscal year 1948.
Do.	do.		2½-inch lump.	120	T	1.8	29.5	54.6	15.9	4.0	4.7	71.3	1.2	2.9	12,660	12,900	15,260	1	1		Oct. 1, 1947.	
Do.	do.		Run-of-mine.	175	T	2.7	28.8	59.3	12.2	1.2	4.8	76.1	1.6	4.1	13,180	13,540	15,730	1	1		Sept. 30, 1947.	
Do.	do.		do.	220	T	2.2	32.5	58.5	9.0	.8												May 9, 1950.
Do.	do.		2-inch lump (crushed to 2-inch).	180	T	3.1	32.7	57.3	10.0	1.1												Do.
Do.	do.		0 by 2-inch.	200	T	1.8	30.1	57.4	12.5	2.7	4.7	74.7	1.3	4.1	13,100	13,400	15,180	1	1		8½	Do.
Do.	do.		Run-of-mine.	100	T	2.9	30.3	56.5	12.2	0.6	4.8	73.8	1.4	5.9	12,810	13,190	15,570	1	1		9	Nov. 23, 1948.
Do.	do.		do.	123	D	2.2	31.3	56.1	12.0	1.0	4.5	73.8	1.4	7.0	11,460	12,290	15,270	1	1		9	Dec. 20, 1948.
Do.	do.		Pittsburgh.	300	T	6.8	31.3	52.9	15.6	1.7	4.5	69.8	1.4	7.0	11,460	12,290	15,270	1	1		2	Fiscal year 1948.
Do.	do.		do.	346	D	12.5	30.3	51.9	17.7	.8												Sept. 17, 1948.
Do.	do.		do.	3, 237	D	3.5	30.6	50.9	18.5	1.6												Fiscal year 1948.
Do.	do.		Run-of-mine (crushed to 2¼-inch).	151	D	17.6	30.9	53.1	16.0	.8												Fiscal year 1949.
Do.	do.		0 by 1½-inch.	151	D	17.6	30.9	53.1	16.0	.8												Fiscal year 1948.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

TENNESSEE

County	Locality	Sample	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis	Notes	Date	
ANDERSON COUNTY	Devonia:	Hvab	100	1.937.9	54.0	8.1	3.2	13,460	1	May 26, 1950.	
		Hvab	150	1.837.7	52.6	9.7	3.4	13,230	1	Do.	
		Hvab	250	2.036.5	50.1	13.4	3.6	12,540	5	49	
	Rosedale	Hvab	460	2.138.6	48.5	12.9	4.1	12,650	1	Dec. 19, 1949.	
		Hvab	5, 213	1.937.0	52.2	10.9	3.2	13,010	7	Fiscal year 1949.	
		Hvab	55	1.735.8	51.9	12.3	3.9	12,810	1	Fiscal year 1950.	
	Fork Mountain:	Hvab	8, 376	2.436.6	49.6	13.8	3.7	12,450	5	Fiscal year 1949.	
		Hvab	12	2.334.9	55.6	9.5	1.7	13,430	1	May 25, 1950.	
	BLEDSOE COUNTY	Lees Station: Lees Gulf No. 1.	Hvab	30	3.742.0	55.8	2.2	9	14,100	1	May 11, 1950.
			Hvab	50	3.341.8	54.8	3.4	7	13,980	1	Do.
Block:		Hvab	150	4.338.5	51.8	0.7	9	12,750	5	47	
		Hvab	50	3.140.9	56.4	2.7	7	14,140	1	Dec. 23, 1949.	
Carbon Hill:		Hvab	50	3.390.9	56.8	3.3	7	13,970	1	Do.	
		Hvab	50	3.330.2	55.6	5.2	7	13,770	1	Do.	
Pee Wee:		Hvab	182	2.739.5	54.9	5.6	7	13,670	2	Fiscal year 1948.	
		Hvab	49	3.538.4	54.2	7.4	7	13,390	1	Dec. 23, 1949.	
Clinchmore:		Hvab	169	3.238.7	53.6	7.7	8	13,220	1	Fiscal year 1948.	
		Hvab	120	3.836.0	55.0	9.0	9	12,600	4 1/2	44	
Clinechmore:	Hvab	95	3.040.6	55.9	3.5	5	13,950	1	May 29, 1950.		
	Hvab	105	3.139.5	53.8	6.7	5	13,910	1	Do.		
Carryville: High Point No. 2.	Hvab	100	4.935.0	52.6	12.4	6	13,480	1	Do.		
	Hvab	169	2.634.7	50.0	13.3	1.3	12,270	3	Fiscal year 1949.		
Hickey:	Hvab	110	2.640.7	56.4	2.9	1.0	14,200	1	Dec. 14, 1949.		
	Hvab	100	2.740.4	54.9	4.7	1.1	13,880	1	Do.		
Diamond No. 3.	Hvab	100	2.939.2	52.8	8.0	1.1	13,310	1	Do.		
	Hvab	160	3.139.4	52.6	8.0	1.1	13,310	5 1/2	47		
Jellico:	Hvab	100	2.843.0	52.3	4.7	2.5	13,820	1	May 17, 1950.		
	Hvab	500	2.842.0	52.6	5.4	2.9	13,700	1	Do.		
La Follette:	Hvab	880	2.739.1	56.2	4.7	1.2	13,850	1	Fiscal year 1949.		
	Hvab	2,460	3.039.0	55.6	5.4	1.2	13,700	3	Do.		
Nurex:	Hvab	1,493	2.938.1	53.8	8.1	1.1	13,350	16	Fiscal year 1948.		
	Hvab	2,581	2.938.6	53.1	6.3	1.3	13,560	3	Fiscal year 1948.		
Rex No. 2:	Hvab	140	3.736.6	53.2	10.0	1.1	12,800	3	Fiscal year 1948.		
	Hvab	62	2.236.3	54.2	9.3	6	13,250	1	Fiscal year 1950.		
Rex No. 1:	Hvab	306	2.835.5	53.4	10.8	1.2	12,850	2	Fiscal year 1949.		
	Hvab	2,254	3.436.3	53.9	9.9	1.2	12,910	2	Do.		
Rex No. 2:	Hvab	4,267	3.435.5	52.9	11.6	1.3	12,860	8	Fiscal year 1950.		
	Hvab	1,327	4.734.3	52.1	13.1	1.6	12,150	11	Fiscal year 1948.		
Rex No. 2:	Hvab	6,696	3.335.4	51.5	13.1	1.0	12,640	5	Fiscal year 1948.		
	Hvab	992	3.138.9	55.1	6.0	1.5	13,590	11	Fiscal year 1949.		
Rex No. 2:	Hvab	18,108	2.436.7	53.5	9.8	1.1	11,250	2	Fiscal year 1950.		
	Hvab	7,956	2.935.4	52.2	12.4	1.3	13,160	11	Fiscal year 1949.		
Rex No. 2:	Hvab	3,303	2.736.2	52.8	11.0	1.1	12,970	10	Fiscal year 1949.		
	Hvab	2,717	2.932.7	49.5	17.8	1.1	11,800	12	Fiscal year 1950.		
Rex No. 2:	Hvab	12,862	3.235.7	52.8	11.5	1.4	12,700	12	Fiscal year 1948.		
	Hvab	12,862	3.235.7	52.8	11.5	1.4	12,700	12	Fiscal year 1948.		

Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent										Ultimate, percent				Caloric value		Number of analyses ²	Ash-softening temperature, °F.	Number of ash-softening temperatures ²	Agglomerating index ³	Free-swelling index	Hardgrove grindability index	Date
						Moisture as received					Dry coal					B. t. u., as-received basis		B. t. u., dry basis										
						Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	Hydrogen	Carbon	Nitrogen	Oxygen											
TENNESSEE—Continued																												
CAMPBELL COUNTY—continued																												
Vasper:	Coal Creek	Hvab	5-inch lump	50	T	2.1	38.8	85.7	0.4	2.0	0.9	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Dec. 20, 1949.						
Do.	do	Hvab	3- by 5-inch	834	D	1.8	37.4	84.8	0.7	0.8	0.8	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1949.						
Do.	do	Hvab	2 1/2- by 5-inch	55	T	2.3	35.5	82.0	0.2	0.2	0.8	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Dec. 20, 1949.						
Do.	do	Hvab	2- by 4-inch	588	D	2.0	38.7	87.7	0.3	0.7	0.7	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1949.						
Do.	do	Hvab	1 1/2- by 1-inch (OT)	50	T	2.9	32.5	86.0	0.3	0.6	0.6	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Dec. 20, 1949.						
Do.	do	Hvab	0 by 1/4-inch	50	T	3.3	33.5	80.2	0.1	0.7	0.7	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
CLAIBORNE COUNTY																												
Anthracite:	Rich Mountain and Jellico	Hvab	1/4- by 1 1/4-inch (OT)	60	T	3.1	39.5	84.4	0.1	1.4	1.4	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	May 4, 1950.						
Do.	do	Hvab	0 by 1/4-inch	30	T	3.9	37.1	83.6	0.3	1.6	1.6	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Clearfield:	Dippel & Dippel	Hvab	Run-of-mine (crushed to 2-inch)	260	T	4.6	37.6	86.8	0.5	1.1	1.1	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	May 3, 1950.						
Do.	do	Hvab	6-inch lump	40	T	2.5	40.1	86.1	0.3	0.7	0.7	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	May 8, 1950.						
Do.	do	Hvab	3- by 6-inch	50	T	2.7	40.0	87.0	0.3	0.6	0.6	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	0 by 3-inch	160	T	3.2	36.3	83.9	0.8	1.1	1.1	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	0 by 2-inch	1,609	D	3.1	36.2	84.3	0.5	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1950.						
Marion:	do	Hvab	6-inch lump	40	T	2.4	39.9	85.8	0.3	0.9	0.9	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	June 6, 1950.						
Do.	do	Hvab	do	150	D	1.9	38.3	85.1	0.6	1.1	1.1	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	2	Cf	Fiscal year 1948.						
Do.	do	Hvab	3- by 8-inch	34	D	2.1	38.8	83.8	0.7	1.2	1.2	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	3- by 7-inch	391	D	2.1	38.1	84.8	0.7	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	6	Cf	Fiscal year 1949.						
Do.	do	Hvab	3- by 6-inch	35	T	2.3	39.2	86.2	0.4	0.6	0.6	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	June 6, 1950.						
Do.	do	Hvab	do	47	D	2.4	37.6	87.4	0.5	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1948.						
Do.	do	Hvab	3- by 5-inch	104	D	2.0	38.5	84.2	0.7	1.3	1.3	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	2- by 7-inch	46	D	2.2	38.2	87.7	0.4	0.8	0.8	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1949.						
Do.	do	Hvab	do	66	D	2.3	37.6	85.5	0.9	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	2- by 3-inch	992	D	2.6	39.3	86.3	0.4	1.3	1.3	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	2	Cf	Fiscal year 1950.						
Do.	do	Hvab	1 1/2- by 3-inch	302	D	2.3	38.1	85.0	0.6	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	4	Cf	June 6, 1950.						
Do.	do	Hvab	3/4- by 1-inch (OT)	50	T	2.7	38.2	83.9	0.7	1.1	1.1	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1948.						
Do.	do	Hvab	0 by 1 1/2-inch	303	D	3.1	37.1	82.7	1.0	1.2	1.2	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
Do.	do	Hvab	0 by 1 1/2-inch	50	T	3.9	34.9	83.6	1.1	1.2	1.2	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Fiscal year 1948.						
Do.	do	Hvab	0 by 1/4-inch	25	T	5.5	34.6	84.6	1.0	1.1	1.1	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	June 6, 1950.						
Middlesboro (Ky.):	Sterling	Hvab	6-inch lump	40	T	3.1	37.3	85.4	0.7	0.8	0.8	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	May 1, 1950.						
Rennebaum	do	Hvab	0 by 6-inch	250	T	3.3	36.5	83.8	0.9	0.9	0.9	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	Do.						
GRUNDY COUNTY																												
Coalmont:	Sewanee	Hvab	Run-of-mine	250	T	4.6	30.0	80.8	0.9	0.9	0.9	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	1	Cf	June 9, 1950.						
Do.	do	Hvab	Run-of-mine (crushed to 2-inch)	2,562	D	4.4	29.6	87.8	1.2	0.6	0.6	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	4	Cf	Fiscal year 1948.						
Do.	do	Hvab	Run-of-mine	9,434	D	3.6	30.6	87.0	1.2	1.0	1.0	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	7	Cf (1), Cf (7), Cp (1)	Fiscal year 1949.						
Do.	do	Hvab	Run-of-mine (crushed to 2-inch)	53,362	D	3.9	30.0	89.1	1.0	0.8	0.8	5.3	81.0	1.9	6.7	14.2	10.1	14,520	12,180	18	Cf (8), Cf (54), Cp (4)	Fiscal year 1950.						

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

WEST VIRGINIA

County	Locality	Sample	Weight	Moisture	Volatiles	Fixed Carbon	Heating Value	Analysis	Notes	Date		
BARROU COUNTY	Berryburg:	Hvab	70	1.6	38.5	51.7	9.8	3.7	13,560	13,770	Apr. 13, 1950.	
		Hvab	175	3.4	38.9	51.8	9.3	3.2	13,650	13,890	Do.	
	Do.	Hvab	100	1.5	38.8	52.8	8.6	3.4	6.0	13,420	13,890	67
		Hvab	65	1.2	38.8	52.8	8.6	3.4	5.2	13,780	13,980	8
	Do.	Hvab	80	2.4	37.8	53.0	10.3	3.5	4.7	13,560	13,730	61
		Hvab	80	2.4	37.8	53.0	9.2	3.5	4.3	13,530	13,860	7 1/2
	Brownton:	Hvab	3,367	1.6	38.5	50.5	11.0	3.8	13,350	13,570	Fiscal year 1950.	
		Hvab	865	1.7	37.7	49.9	12.6	3.5	13,010	13,240	Fiscal year 1948.	
	Do.	Hvab	814	2.3	38.8	49.6	13.6	3.4	12,790	13,090	Do.	
		Hvab	6,387	1.4	38.8	51.6	9.2	3.5	13,630	13,820	Fiscal year 1950.	
	Do.	Hvab	223	1.6	38.6	51.2	10.2	3.5	13,500	13,720	Do.	
		Hvab	125	2.1	37.0	55.4	7.6	2.2	6.2	13,660	13,940	June 7, 1948.
	Century:	Hvab	275	2.6	36.0	52.5	8.1	2.4	13,530	13,880	Do.	
		Hvab	200	2.4	37.4	53.8	8.8	1.9	6.1	13,430	13,760	Do.
	Do.	Hvab	200	1.6	38.3	48.9	12.5	5.1	5.2	13,000	13,280	June 3, 1948.
		Hvab	218	1.6	38.3	48.9	12.5	5.1	13,000	13,280	Apr. 5, 1950.	
	Do.	Hvab	200	1.5	37.7	53.1	9.8	3.8	13,500	13,700	Fiscal year 1949.	
		Hvab	250	2.9	38.2	51.1	9.7	3.9	13,330	13,730	Apr. 5, 1950.	
	Do.	Hvab	56	1.1	38.0	52.3	9.7	2.9	13,760	13,910	Fiscal year 1949.	
		Hvab	425	1.3	37.7	51.4	10.7	3.7	13,410	13,580	June 29, 1950.	
Do.	Hvab	4,733	1.1	38.1	50.8	11.1	3.5	13,430	13,570	Fiscal year 1950.		
	Hvab	10,072	1.7	38.1	53.1	7.8	2.5	13,880	14,120	Do.		
Do.	Hvab	106	2.8	38.9	52.9	7.2	2.5	5.1	13,850	14,250	June 29, 1950.	
	Hvab	126	1.3	38.9	53.1	7.5	2.4	14,010	14,190	Fiscal year 1950.		
Do.	Hvab	4,156	2.2	37.3	50.6	12.1	3.4	13,070	13,560	Do.		
	Hvab	6,270	2.4	37.3	51.5	11.2	3.3	13,200	13,520	Do.		
Do.	Hvab	2,812	2.1	37.2	51.7	11.1	3.3	13,280	13,520	Do.		
	Hvab	600	3.8	38.3	52.4	9.3	3.0	13,240	13,810	June 29, 1950.		
Do.	Hvab	16,022	2.9	37.2	51.8	11.0	3.1	13,190	13,580	Fiscal year 1949.		
	Hvab	540	3.5	38.0	51.0	11.0	3.0	13,040	13,170	Fiscal year 1950.		
Do.	Hvab	80	2.8	28.6	58.5	11.9	4.9	4.8	13,200	13,580	72	
	Hvab	48	1.5	37.3	52.3	10.4	2.8	13,420	13,630	Jan. 25, 1950.		
Do.	Hvab	190	2.5	38.3	52.8	7.9	3.3	13,740	14,090	Fiscal year 1949.		
	Hvab	1,080	2.7	38.4	53.6	8.0	3.1	13,610	13,990	May 9, 1950.		
Do.	Hvab	400	2.3	38.9	54.7	6.4	2.6	13,880	14,210	Do.		
	Hvab	520	3.4	38.9	55.0	6.1	2.4	13,820	14,310	May 9, 1950.		
Do.	Hvab	51	1.6	34.1	55.9	10.1	2.5	13,300	13,510	Do.		
	Hvab	400	4.6	38.9	54.3	5.8	2.6	5.3	13,680	14,330	Do.	
Do.	Hvab	370	3.4	38.1	53.2	8.7	3.5	13,360	13,820	Fiscal year 1950.		
	Hvab	100	3.5	37.0	55.5	7.9	2.9	5.6	13,410	13,890	Do.	
Do.	Hvab	390	2.9	38.5	53.5	8.0	3.1	13,570	13,980	May 5, 1950.		
	Hvab	95	2.0	33.3	50.9	13.8	3.7	12,690	12,940	May 22, 1950.		
Do.	Hvab	360	3.7	36.8	54.4	8.8	2.6	13,210	13,720	May 26, 1950.		
	Hvab	80	6.6	36.2	54.8	9.0	2.2	5.2	12,800	13,700	Do.	
Do.	Hvab	410	2.1	38.1	50.0	11.9	3.5	6.3	12,800	13,700	June 7, 1948.	
	Hvab	175	2.2	38.9	47.4	13.7	5.9	5.1	13,070	13,360	Do.	
Do.	Hvab	350	5.7	38.1	49.0	12.9	5.2	4.9	12,760	13,050	June 28, 1950.	
	Hvab	500	4.8	32.8	53.7	13.5	1.8	4.4	12,370	13,110	June 7, 1948.	
Do.	Hvab	15	3.5	38.9	58.1	3.0	.9	14,100	14,620	Do.		
	Hvab	40	3.3	39.1	57.2	3.7	.9	13,980	14,450	Do.		
Do.	Hvab	450	2.8	38.6	55.3	6.1	1.2	13,740	14,140	Fiscal year 1949.		
	Hvab	180	3.9	36.4	55.5	8.1	1.4	13,200	13,730	Apr. 10, 1950.		
Do.	Hvab	471	4.1	37.6	55.4	7.0	1.0	13,240	13,810	Fiscal year 1950.		
	Hvab	2,260	3.8	36.8	55.1	8.1	1.1	13,190	13,710	Do.		

3 Numbers in parentheses indicate the number of determinations made.

See Explanation of Symbols (p. 5).

1 Numbers above 1 indicate the number of deliveries averaged.

ROONE COUNTY

Ashford:	Orland Nos. 2 and 5.	Hvab	15	3.5	38.9	58.1	3.0	.9	14,100	14,620	Apr. 10, 1950.
		Hvab	40	3.3	39.1	57.2	3.7	.9	13,980	14,450	Do.
Do.	Hvab	450	2.8	38.6	55.3	6.1	1.2	13,740	14,140	Fiscal year 1949.	
	Hvab	180	3.9	36.4	55.5	8.1	1.4	13,200	13,730	Apr. 10, 1950.	
Do.	Hvab	471	4.1	37.6	55.4	7.0	1.0	13,240	13,810	Fiscal year 1950.	
	Hvab	2,260	3.8	36.8	55.1	8.1	1.1	13,190	13,710	Do.	

Do.	do	0 by 2-inch (W and A C)	T	5.1 35.2 53.9 10.9	.7	12,630 13,310	1	Cf	Do.
Ridgeview:	do	0 by 3/8-inch (A C)	70	5.5 30.3 50.0 19.7	.8	11,200 11,850	1	Cf	Do.
Ridgeview:	do	5-inch lump.	15	2.6 40.6 54.3 5.1	1.2	14,030 14,410	1	Cf	Apr. 21, 1950.
Do.	do	2 3/4 by 5-inch	30	2.8 41.1 54.0 4.9	1.3	14,070 14,470	1	Cf	Do.
Do.	do	0 by 2 3/4-inch	140	2.9 39.1 53.0 7.9	1.9	13,440 13,840	1	Cf	Do.
Vani:	do	Run-of-mine (crushed to 2-inch)	400	5.2 34.6 60.0 5.4	.6	7.5 13,470 14,200	1	Cf	May 31, 1950.
Robin Hood:	do	Run-of-mine (crushed to 5-inch)	420	2.3 35.3 57.5 7.2	.8	5.1 13,940 14,260	1	Cf	Do.
Do.	do	5-inch lump.	60	2.3 37.6 57.9 4.5	.5	14,340 14,680	1	Cf	Apr. 14, 1950.
Do.	do	2 by 5-inch (W)	150	2.6 36.1 57.9 6.0	.6	13,990 14,360	1	Cf	Do.
Do.	do	2 by 5-inch	709	2.5 35.5 58.2 6.1	.6	13,970 14,330	13	Cf (12), Cp (1)	Fiscal year 1950.
Do.	do	1 1/2 by 4-inch	164	1.8 35.7 58.0 6.2	.7	14,050 14,310	3	Cf	Fiscal year 1948.
Do.	do	do	228	2.1 35.4 58.0 6.8	.7	13,910 14,210	5	Cf	Fiscal year 1949.
Do.	do	1 1/2 by 3-inch	217	2.1 34.4 58.5 7.1	.7	13,870 14,170	3	Cf (2), Cp (1)	Fiscal year 1948.
Do.	do	1 1/4 by 3-inch	642	2.8 35.9 57.5 6.6	.8	13,850 14,250	4	Cf (3), Cp (1)	Do.
Do.	do	do	229	2.1 36.4 57.8 5.8	.7	14,090 14,390	4	Cf	Fiscal year 1949.
Do.	do	1 1/4 by 2 3/4-inch	104	2.3 35.4 57.0 7.6	.6	13,790 14,110	2	Cf	Fiscal year 1948.
Do.	do	1 1/4 by 2 1/2-inch (W)	106	2.4 35.7 57.4 6.9	.8	13,860 14,170	2	Cf	Fiscal year 1950.
Do.	do	3/8 by 2-inch (W)	100	4.4 34.8 57.3 7.9	.9	13,430 14,050	1	Cf	Apr. 14, 1950.
Do.	do	0 by 2-inch (W)	270	5.1 33.3 55.7 9.2	.8	13,100 13,810	1	Cf	Do.
Do.	do	0 by 1 1/4-inch	867	5.3 33.5 54.5 11.9	.9	12,650 13,360	5	Cf (8), Cp (1)	Fiscal year 1948.
Do.	do	do	401	4.7 32.3 55.6 12.0	.8	12,680 13,310	1	Cg (2), Cf (3)	Fiscal year 1949.
Do.	do	0 by 3/8-inch	40	4.9 32.3 54.4 12.7	.6	12,600 13,250	1	Cf	Apr. 14, 1950.
BROOKE COUNTY									
Follansbee:	Pittsburgh	Run-of-mine (crushed)	440	8.7 33.9 54.0 12.1	1.2	11,230 12,290	1	At	Fiscal year 1948.
Do.	do	do	1,552	7.4 34.6 52.8 12.6	1.7	11,640 12,570	2	Cf (6), At (1), Nab (1)	Fiscal year 1949.
Do.	do	2-inch lump.	70	3.7 41.4 49.7 9.0	3.6	5.1 74.2 1.5	1,050	Cf	Dec. 10, 1947.
Do.	do	2 by 5-inch	208	5.8 38.5 50.0 10.6	3.0	12,000 13,500	4	Cf	Fiscal year 1948.
Do.	do	0 by 2 1/4-inch	2,017	7.2 36.8 52.0 11.4	1.7	12,270 13,030	3	Cf (1), Cp (2)	Fiscal year 1949.
Do.	do	0 by 2-inch	230	4.9 38.8 50.0 11.1	2.9	11,740 12,650	1	Cf (1), Cp (1)	Dec. 10, 1947.
Do.	do	do	431	8.0 37.3 52.8 13.9	3.1	12,300 13,030	1	Cf (1), Cp (1)	Fiscal year 1948.
Do.	do	0 by 1 1/4-inch	524	3.0 35.9 52.0 12.1	2.1	12,700 13,090	1	Cf	Do.
Virginville:	do	Modified run-of-mine (plus 3/8-inch, W, and 1/2 minus 3/8-inch)	1,000	5.8 38.0 55.0 7.0	1.2	5.7 12,930 13,720	1	Cf	Aug. 2, 1949.
Brooke County Deep No. 1.	do	0 by 3/8-inch	100	6.8 31.4 48.5 20.1	1.3	10,870 11,660	1	Cf	Do.
FAYETTE COUNTY									
Beelick Knob:	Fire Creek	1 1/4 by 4-inch (W)	20	5.0 19.0 74.2 6.8	.6	13,800 14,520	1	Cg	Apr. 4, 1950.
Do.	do	3/8 by 1 1/4-inch (W)	15	6.4 18.9 72.8 8.3	.6	13,260 14,170	1	Cg	Do.
Do.	do	0 by 5/8-inch	70	3.6 19.7 73.5 6.8	.7	4.4 83.1 1.3	1,280	Cg	Do.
Bellwood:	do	1 1/4-inch lump.	45	3.1 19.6 72.7 7.7	.7	13,990 14,430	1	Cg	Mar. 15, 1950.
Alaska No. 2:	Fire Creek and Pochontas No. 6.	0 by 1 1/4-inch	140	2.9 19.3 75.1 5.6	.8	2.9 14,300 14,810	1	Cg	Do.
Do.	do	do	185	1.7 20.6 73.4 6.0	.8	14,420 14,760	2	Cg	Fiscal year 1949.
Do.	do	2 1/2 by 5-inch	150	1.9 25.7 70.6 3.7	.8	14,720 15,010	3	Cg	Fiscal year 1948.
Do.	do	Run-of-mine.	104	5.5 33.6 62.6 3.8	.6	13,570 14,370	1	Cf	May 5, 1950.
Carlisle: Oakwood:	Sewell	8-inch lump.	25	1.7 28.4 68.7 2.9	.6	5.0 85.6 1.8	1,240	Cg	May 17, 1949.
Do.	do	3 by 8-inch	50	2.0 28.4 68.4 3.2	.5	14,670 15,050	1	Cg	Do.
Do.	do	1 1/4 by 3-inch	75	3.1 28.0 67.6 4.4	.5	14,390 14,850	1	Cg	Do.
Do.	do	0 by 1 1/4-inch	19,180	2.5 26.8 64.6 8.6	.6	13,660 14,010	62	Cg (50), Cf (2), Cp (2)	Fiscal year 1948.
Do.	do	do	5,890	2.8 28.4 64.7 6.9	.7	13,940 14,340	12	Cg (18), Cf (4)	Fiscal year 1949.
Do.	do	do	1,380	1.9 27.0 67.0 6.0	.7	14,200 14,470	1	Cg	Fiscal year 1950.
Do.	do	0 by 1 1/4-inch	1,205	3.3 27.6 65.9 6.5	.6	14,020 14,510	1	Cg	May 17, 1949.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.
 3 Numbers in parentheses indicate the number of determinations made.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent			Ultimate, percent						Calorific value		Number of analyses ²	Ash-softening temperature, F. ³	Number of ash-softening temperatures ⁴	Agglomerating Index ^{1,1}	Free-swelling Index	Hardgrove grindability Index	Date
						Moisture as received coal	Volatiles matter	Fixed carbon	Dry coal						B. t. u., as-received basis	B. t. u., dry basis							
									Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen									
WEST VIRGINIA—Continued																							
FAYETTE COUNTY—continued																							
Fire Creek: Fire Creek	Sewell	Mvb	3-inch lump	40 T	T	2.8	21.1	73.8	2.1	0.6							14,910	15,330	1	Cg		Mar. 30, 1950.	
Do	do	Mvb	1½- by 3-inch	55 T	T	3.1	24.8	71.8	3.4	.7							14,700	15,160	1	Cg	9	Do.	
Do	do		0 by 1½-inch	170 T	T	4.1	24.4	71.5	4.1	.7							14,390	15,000	1	Cg	9	Do.	
Glen Jean: Collins	do	Mvb	¾-inch lump	200 T	T	3.6	22.5	74.8	2.7	.7	4.8	86.9	1.7	3.2	14,710	15,260	12,380	1	Cg		Dec. 28, 1949.		
Do	do		0 by ¾-inch	190 T	T	8.2	23.3	72.0	4.7	.7							13,570	14,790	1	Cg	8½	Do.	
Kathryn: Henhook	Fire Creek	Lvb	4-inch lump	35 T	T	2.2	19.8	78.0	2.2	.8	4.7	87.7	1.7	2.9	15,020	15,350	12,220	1	Cg		Mar. 28, 1950.		
Do	do	Lvb	1½- by 4-inch (W)	40 T	T	3.7	19.6	74.2	2.2	.7							14,150	14,700	1	Cg	9	Do.	
Do	do	Lvb	0 by 1½-inch (¾- by 1¼-inch W)	170 T	T	3.4	19.2	73.5	7.3	.9							13,840	14,330	1	Cg	9	Do.	
Laurel: Laurel	do	Lvb	4-inch lump	30 T	T	3.0	21.1	75.1	3.8	1.1	4.7	85.6	1.6	3.2	14,560	15,010	12,030	1	Cg		Mar. 31, 1950.		
Do	do	Lvb	1½- by 4-inch (W)	50 T	T	5.4	20.8	73.6	5.6	.8							13,970	14,760	1	Cg		Do.	
Do	do	Lvb	¾- by 1½-inch (W)	100 T	T	2.4	29.2	69.8	9.7	.8							13,350	14,060	1	Cg		Do.	
Do	do	Lvb	0 by ¾-inch	150 T	T	4.4	20.6	70.4	9.0	.7							13,520	14,140	1	Cg	9	Do.	
Lawton: Greenwood	do	Lvb	3-inch lump	30 T	T	3.2	21.3	71.8	6.9	1.9							14,210	14,540	1	Cg		Mar. 27, 1950.	
Do	do	Lvb	1½- by 3-inch (W)	35 T	T	3.3	20.6	71.4	8.0	1.0							13,980	14,450	1	Cg		Do.	
Do	do	Lvb	¾- by 1½-inch (W)	40 T	T	5.1	20.6	71.7	7.7	.8							13,750	14,480	1	Cg		Do.	
Do	do	Lvb	0 by ¾-inch	220 T	T	2.9	20.1	69.4	10.5	1.0							13,580	13,980	1	Cg	9	Do.	
Layland: Layland	do	Lvb	0 by 1½-inch	7,816 D	D	2.7	20.9	70.3	8.8	.9							13,830	14,210	7	Cg		Fiscal year 1948.	
Lochgelly: Lochgelly	Sewell	Hvab	Run-of-mine	1,888 D	D	4.3	25.6	68.4	6.0	.6							13,960	14,590	5	Cg		Do.	
Minden: Minden	do		do	170 D	D	2.9	26.2	68.2	5.6	.8							14,140	14,560	2	Cg (1), Cf (1)		Fiscal year 1949.	
Page: Page	Eagle	Hvab	1½-inch lump	125 T	T	2.0	29.7	69.6	10.7	1.1							12,730		1	Cg		Mar. 18, 1949.	
Do	do	Hvab	0 by 1½-inch	350 T	T	3.3	30.5	62.7	6.8	1.0	5.0	81.1	1.6	4.5	13,980	14,450	12,540	1	Cg	9	Do.		
Do	No. 2 Gas	Hvab	¾-inch lump	25 T	T	2.4	29.2	69.6	11.2	1.2							13,340	13,660	1	Cg	9	May 25, 1949.	
Do	do	Hvab	0 by ¾-inch	50 T	T	3.3	30.0	69.5	9.5	1.0	4.9	78.3	1.5	4.8	13,340	13,940	12,910	1	Cg	9	Do.		
Do	Eagleland No. 2 Gas		0 by 1½-inch	32,182 D	D	3.7	30.0	68.2	6.8	.8							13,850	14,380	26	Cg (120), Cf (1)		Fiscal year 1949.	
Do	do		0 by ¾-inch	9,088 D	D	1.1	31.1	61.4	7.5	1.0							14,160	14,320	2	Cg		Do.	
Do	do		0 by ¾-inch	5,100 D	D	3.9	30.2	59.7	10.1	1.0							13,290	13,830	32	Cg (28), Cf (4)		Fiscal year 1948.	
Powellton: Armstrong	Eagle	Hvab	Run-of-mine	9,15 T	T	5.4	31.5	57.6	10.9	.9	4.9	75.3	1.4	6.6	12,870	13,900	12,730	1	Cg	8	Dec. 6, 1948.		
GILMER COUNTY																							
Gilmer: Jon Tee	Pittsburgh	Hvab	6-inch lump	50 T	T	2.1	42.6	49.1	8.3	2.2	5.4	75.3	1.2	7.6	13,470	13,760	12,150	1	Cf		Apr. 17, 1950.		
Do	do		2- by 5-inch	58 D	D	2.1	41.5	49.4	9.1	2.4						13,330	13,620	1	Cf		Fiscal year 1949.		
Do	do	Hvab	1½- by 6-inch	100 T	T	2.3	42.3	49.0	8.7	2.2						13,360	13,680	1	Cf		Fiscal year 1949.		
Do	do		¾- by 5-inch	4,370 D	D	2.2	41.6	49.3	9.1	2.4						13,250	13,550	13	Cf		Apr. 17, 1950.		
Do	do		1- by 6-inch	602 D	D	1.7	42.4	48.5	9.1	2.1						13,320	13,550	1	Cf		Fiscal year 1950.		
Do	do		¾- by 2-inch	196 D	D	3.1	39.5	51.0	9.8	2.2						13,030	13,450	1	Cf		Do.		
Do	do		¾- by 1½-inch	198 D	D	2.2	40.4	50.8	9.0	2.5						13,220	13,520	2	Cf		Do.		
Do	do		0 by 1½-inch	100 T	T	3.6	39.6	51.3	9.7	2.6						12,960	13,440	1	Cf	7	Apr. 17, 1950.		
Do	do		do	10,520 D	D	3.3	39.0	50.0	11.0	2.7						12,760	13,200	11	Cf	55	Fiscal year 1950.		

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

GRANT COUNTY	Upper Freeport and Bakerstown.	Mvb	Run-of-mine (crushed to 5-inch, 3/4- by 5-inch (W), 1/4- by 5-inch (W), 0 by 3/4-inch.	T	4.7 21.4 68.7 9.9	9.	13,350 14,010	12,500	1	Cg	Sept. 15, 1949.
Bayard: Armstrongcleaning plant.	Do.	Mvb	Run-of-mine (crushed to 5-inch, 3/4- by 5-inch (W), 1/4- by 5-inch (W), 0 by 3/4-inch.	450	5.5 22.0 68.7 9.3	8.	3.3 13,300 14,070	12,650	1	Cg	Do.
Do.	do.	Mvb	Run-of-mine (crushed to 5-inch, 3/4- by 5-inch (W), 1/4- by 5-inch (W), 0 by 3/4-inch.	450	3.1 22.2 67.6 10.2	9.	13,500 13,930	12,360	1	Cg	Do.
GREENBRIER COUNTY											
Anjean: Anjean.	Fire Creek and Sewell.	Mvb	7-inch lump.	50	2.8 26.0 69.5 4.5	1.3	4.9 84.4 1.8	3.1 14,480 14,890	1	Og	Jan. 4, 1950.
Do.	do.	Mvb	3- by 7-inch (W).	100	3.2 26.1 69.4 4.5	9.	14,410 14,880	12,470	1	Cg	Do.
Do.	do.	Mvb	1 1/4- by 3-inch (W).	100	3.2 25.4 68.9 5.7	8.	14,180 14,660	12,870	1	Cg	Do.
Do.	do.	Mvb	3/8- by 1 1/4-inch (W).	300	3.3 25.3 67.7 6.8	9.	13,280 14,480	12,780	1	Cg	84
Carl: Timonty.	Sewell.	Mvb	Run-of-mine (crushed to 3/4-inch).	200	3.7 28.2 67.3 3.5	7.	4.2 14,430 14,980	12,540	1	Cg	Nov. 29, 1949.
Clearco: Beach Knob.	do.	Mvb	Run-of-mine.	100	3.2 27.7 67.9 4.4	8.	4.4 14,340 14,820	12,150	1	Cg	Jan. 16, 1950.
Brooke	do.	Mvb	do.	72	1.8 28.6 66.2 7.2	1.5	13,970 14,230	2	Cg	Fiscal year 1949.	
Do.	do.	Mvb	2 1/4- by 5-inch (OT).	35	2.6 28.2 67.7 4.4	1.2	4.0 14,450 14,840	12,310	1	Cg	Jan. 17, 1950.
Do.	do.	Mvb	1 1/4- by 2 1/2-inch (OT).	80	2.6 27.9 66.6 5.8	1.2	14,100 14,570	12,530	1	Cg	Do.
Do.	do.	Mvb	0 by 1 1/4-inch.	120	3.7 26.7 66.4 6.9	1.1	13,860 14,400	12,550	1	Cg	Do.
Crichton: Crichton No. 1.	do.	Mvb	Run-of-mine.	2,966	3.1 28.2 67.9 5.9	1.0	14,120 14,570	5	Cg	Fiscal year 1948.	
Do.	do.	Mvb	1 1/2- by 3-inch.	249	1.3 26.7 68.9 4.4	.8	14,620 14,810	3	Cg	Do.	
Duo: Bell.	do.	Mvb	1- by 4-inch.	50	6.3 26.7 69.1 4.2	1.1	4.6 81.3 1.7	7.1 13,420 14,320	1	Cp	Nov. 28, 1949.
Do.	do.	Mvb	0 by 1-inch.	250	6.8 26.9 68.3 4.8	1.1	13,510 14,300	12,130	1	Cf	Do.
Do.	do.	Mvb	3-inch lump.	40	2.8 26.6 69.8 3.6	1.1	4.3 14,530 14,960	12,440	1	Cf	Jan. 23, 1950.
Duo.	do.	Mvb	1 1/4- by 3-inch.	50	3.0 26.5 67.3 6.2	1.4	14,030 14,470	12,150	1	Cg	Do.
Do.	do.	Mvb	do.	5,210	2.0 26.8 68.4 4.8	1.3	14,400 14,660	18	Cg	Fiscal year 1950.	
Do.	do.	Mvb	3/4- by 1 1/4-inch (OT).	55	2.7 26.8 68.1 5.1	1.2	14,260 14,660	12,130	1	Cg	Jan. 23, 1950.
Do.	do.	Mvb	0 by 3/4-inch (OT).	140	3.6 26.1 68.2 5.7	1.3	14,000 14,550	12,200	1	Cg	Do.
Do.	do.	Mvb	0 by 3/4-inch.	1,002	4.1 26.4 67.9 5.7	1.2	13,920 14,510	15,240	4	Cg	Fiscal year 1948.
Do.	do.	Mvb	Run-of-mine.	140	2.6 20.1 69.3 10.6	1.1	3.1 13,550 13,910	12,800	1	Cg	June 24, 1949.
East Rainelle: Charcoal.	do.	Mvb	Run-of-mine.	108	2.5 26.3 65.7 8.0	2.9	13,880 14,240	12,150	1	Cg	Fiscal year 1948.
Jeter: Greenland.	Beckley.	Mvb	do.	70	2.1 20.5 72.0 7.5	1.4	4.5 82.8 1.3	2.5 14,170 14,480	1	Cg	Jan. 10, 1950.
McKoss: Jeromi.	Fire Creek.	Lvb	Run-of-mine (crushed to 1 1/4-inch).	30	2.3 21.6 72.1 6.3	.8	14,370 14,700	12,800	1	Cg	Do.
Laurel Creek.	do.	Mvb	1 1/4-inch lump.	100	2.7 22.1 72.3 5.6	.8	3.0 14,430 14,830	12,910+	1	Cg	Do.
Do.	do.	Mvb	0 by 1 1/4-inch.	70	2.1 22.0 71.3 6.7	.8	4.6 83.5 1.4	3.0 14,310 14,620	1	Cg	Do.
Midland.	do.	Mvb	Run-of-mine.	380	4.5 26.5 68.9 4.6	1.0	4.2 14,080 14,760	12,520	1	Cg	Jan. 24, 1950.
Marfrance: Margarette.	Sewell.	Mvb	do.	307	4.8 26.0 70.2 3.8	.9	14,160 14,870	4	Cg	Fiscal year 1950.	
Do.	do.	Mvb	1 1/4-inch lump.	85	4.0 25.9 69.4 4.7	.7	4.8 83.9 1.5	4.4 14,240 14,820	1	Cg	Fiscal year 1950.
Do.	do.	Mvb	0 by 1 1/4-inch.	240	4.6 26.5 68.1 5.4	.8	14,030 14,710	12,620	1	Cg	Mar. 20, 1950.
Do.	do.	Mvb	do.	160	1.8 26.1 67.0 6.9	.7	14,070 14,330	12,840	1	Cg	Do.
Richwood: Beckley No. 1.	Beckley and Sewell.	Mvb	Run-of-mine.	42	1.1 25.4 69.2 5.4	1.8	14,430 14,590	1	Cg	Fiscal year 1950.	
Do.	do.	Mvb	do.	48	2.9 26.4 65.5 8.1	.7	13,780 14,190	2,870	1	Cg	Fiscal year 1949.
Do.	do.	Mvb	1 1/4- by 3-inch.	56	3.5 25.8 66.5 7.7	.6	13,530 14,020	1	Cf	Do.	
Do.	do.	Mvb	3/8- by 1 1/4-inch.	54	2.3 25.9 66.2 7.9	.6	13,890 14,220	2,910+	1	Cg	Do.
Do.	do.	Mvb	0- by 5/8-inch.	114	5.9 26.1 65.2 8.7	.7	13,240 14,080	12,820	1	Cg	Do.
Do.	do.	Mvb	do.	619	7.6 25.5 62.2 12.3	1.1	12,280 13,290	9,246	2	Cg (5), Cp (3), At (1)	Fiscal year 1950.
Do.	do.	Mvb	0 by 1-inch.	857	6.6 26.2 65.3 8.5	1.0	13,080 14,000	2	Cg	Do.	
Do.	do.	Mvb	0 by 3/4-inch.	410	4.1 26.1 65.2 8.7	1.2	13,430 14,000	1	Cg	Do.	
HARRISON COUNTY											
Clarksburg: Carol No. 2.	Pittsburgh.	Hvab	2 1/4-inch lump.	100	2.1 37.6 50.1 12.3	5.2	5.0 72.0 1.3	4.2 12,960 13,240	1	Cf	June 9, 1948.
Do.	do.	Hvab	0 by 2 1/4-inch.	300	3.8 36.1 47.7 16.2	3.9	12,230 12,710	12,180	1	Cf	Do.
Do.	do.	Hvab	do.	1,253	3.2 38.0 50.3 11.7	3.6	12,830 13,250	5,200	5	Cf	Fiscal year 1948.
Do.	do.	Hvab	do.	1,080	4.8 40.8 50.8 8.4	3.0	12,950 13,410	12,030	1	Cf	May 31, 1950.
Keeley: Keeley No. 2.	do.	Hvab	Run-of-mine.	800	3.1 39.8 49.8 10.4	3.9	5.2 73.3 1.4	5.8 13,020 13,430	1	Cf	Dec. 14, 1948.
Do.	do.	Hvab	do.	139	4.3 39.1 48.7 12.2	4.5	12,560 13,120	3,200	3	Cf	Fiscal year 1948.
Do.	do.	Hvab	2- by 5-inch.	61	2.2 40.5 52.0 7.5	3.0	13,600 13,910	12,050	1	Cf	Do.

Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
2 Numbers above 1 indicate the numbers of deliveries averaged.

TABLE 3.—Analyses of tipples and delivered samples during the fiscal years 1948-50—Continued

County, town, and mine	Bed	Rank ¹	Size of coal ¹	Approximate tons sampled	Kind of sample ¹	Proximate, percent						Ultimate, percent				Calorific value		Number of analyses ²	Ash-softening temperature, F.	Number of ash-softening temperatures ²	Agglomerating index ¹¹	Free-swelling index	Hardgrove grindability index	Date
						Moisture as received	Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	B. t. u., as-received basis	B. t. u., dry basis								
WEST VIRGINIA—Continued																								
HARRISON COUNTY—continued																								
Despard: Columbia	Pittsburgh	Hvab	Run-of-mine	220	T	3.4	38.8	80.8	10.4	2.8	5.1	74.7	1.4	5.6	13,030	13,480	1	12,210	1	Cf	8½	61	May 11, 1950.	
Doa: Eagle No. 2	do	Hvab	4-inch lump	50	T	1.9	42.1	49.2	8.7	3.2					13,520	13,770	1	12,060	1	Cf			June 7, 1950.	
Do	do	Hvab	2 by 5-inch	413	T	2.1	41.8	49.7	8.8	3.7					13,450	13,740	2	22,030	2	Cf			Fiscal year 1950.	
Do	do	Hvab	1 by 5-inch	150	T	2.3	40.8	48.7	10.7	4.4					13,050	13,370	1	12,030	1	Cf			June 7, 1950.	
Do	do	Hvab	½ by 1½-inch	778	D	2.4	31.4	49.2	9.5	3.3					13,280	13,890	4	22,060	4	Cf			Fiscal year 1950.	
Do	do	Hvab	1 by 1-inch	225	T	6.4	40.3	51.1	8.6	3.8					12,790	13,710	1	12,050	1	Cf	7½	63	June 7, 1950.	
Penn. No. 2	do	Hvab	¾ by 6-inch	475	T	1.6	42.2	48.6	9.2	4.2					13,340	13,860	1	12,050	1	Cf			June 22, 1950.	
Do	do	Hvab	0 by ¾-inch	300	T	4.5	40.8	49.7	9.5	3.8					12,870	13,480	1	12,030	1	Cf	8	61	Do.	
Enterprise	do	Hvab	2 by 5-inch	157	D	2.1	38.0	51.9	10.1	2.6					13,300	13,890	2	22,040	2	Cf			Fiscal year 1950.	
Acme	do	Hvab	1¼ by 5-inch	100	T	1.7	39.6	50.4	10.0	2.9					13,340	13,870	1	12,030	1	Cf			June 1, 1950.	
Do	do	Hvab	¾ by 1¼-inch	35	T	2.0	39.3	51.8	8.9	2.8					13,480	13,750	1	12,030	1	Cf			Do.	
Do	do	Hvab	0 by ¾-inch	100	T	3.8	38.6	51.7	9.7	3.1					13,010	13,530	1	12,060	1	Cf	7½	61	Do.	
Erie:	do	do	2 by 6-inch	2,283	D	1.8	41.8	49.3	8.9	3.5					13,520	13,770	12	12		Cf			Fiscal year 1950.	
Do	do	do	2 by 5-inch	10,597	D	2.1	40.7	50.7	8.6	3.4					13,510	13,800	30	32,070	2	Cf			Do.	
Do	do	do	¾ by 1½-inch	541	D	2.3	40.9	49.9	9.2	3.3					13,300	13,610	2			Cf			Do.	
Hezibah:	do	do	1 by 5-inch	340	T	1.6	41.9	48.5	9.6	3.8					13,450	13,660	1	12,080	1	Cf			May 1, 1950.	
Corona Nos. 1, 3, 4, and 5.	do	Hvab	0 by 1-inch	330	T	3.7	41.5	50.1	8.4	3.6	5.2	75.5	1.3	6.0	13,250	13,760	1	12,080	1	Cf	8		Do.	
Do	do	Hvab	Run-of-mine	500	T	2.2	42.0	50.2	7.8	3.2					13,660	13,970	1	12,030	1	Cf	8	56	June 6, 1950.	
Eagle No. 1	do	Hvab	do	600	T	3.1	37.3	51.7	11.0	2.4	5.0	73.5	1.3	6.8	12,840	13,250	1	12,180	1	Cf	7		June 22, 1948.	
Lost Creek:	do	Hvab	do	2,473	D	3.7	37.0	52.6	10.4	2.4					12,820	13,310	7	12		Cf			Fiscal year 1950.	
Clegnon:	do	Hvab	do	12,530	D	2.7	37.9	50.8	11.3	3.4					12,820	13,180	17	28,210	1	Cg (3), Cf (25)	7½	58	Fiscal year 1949.	
Do	do	Hvab	0 by 2½-inch (run-of-mine crushed to 2-inch)	660	T	4.2	41.2	48.9	9.9	4.4					12,910	13,480	1	12,080	1	Cf			June 5, 1950.	
McWhorter:	do	Hvab	0 by 1¼-inch	1,356	D	3.7	38.8	51.6	9.6	2.6					12,980	13,480	2	42,220	2	Cf			Fiscal year 1950.	
Do	do	Hvab	2½-inch lump	205	T	2.4	43.3	49.6	7.1	3.2					13,650	13,990	1	12,050	1	Cf			Mar. 29, 1950.	
Tasa No. 7	do	Hvab	0 by 2¼-inch	520	T	5.0	42.1	49.6	8.3	3.1					13,110	13,800	1	12,030	1	Cf	7½	57	Do.	
Lumberport:	do	Hvab	1¼ by 5-inch	440	T	2.1	41.7	49.5	8.8	3.2					13,520	13,800	1	12,050	1	Cf			May 23, 1950.	
Do	do	Hvab	0 by 1¼-inch	440	T	3.8	40.0	50.8	9.2	3.0					13,140	13,660	1	12,080	1	Cf	7½	60	Do.	
Meadow brook:	do	Hvab	Run-of-mine	50	T	3.1	40.0	53.4	6.6	2.5	5.3	78.0	1.5	6.1	13,720	14,170	1	12,130	1	Cf	8		Apr. 28, 1950.	
Lambert's Run:	do	Hvab	2-inch lump	71	D	2.4	39.0	52.3	8.7	2.3					13,520	13,850	1	12,180	1	Cf			Fiscal year 1948.	
McCandlish:	do	Hvab	2 by 5-inch	310	D	2.0	39.9	52.7	7.4	2.2					13,770	14,050	2	32,170	2	Cf			Do.	
Do	do	Hvab	do	155	D	1.8	36.8	52.9	10.3	2.7					13,310	13,550	2			Cf			Fiscal year 1949.	
Do	do	Hvab	do	1,264	D	1.6	40.9	51.9	7.2	2.8					13,840	14,060	8			Cf			Fiscal year 1950.	
Monongah:	do	Hvab	do	65	T	1.7	40.1	51.0	8.9	3.3					13,600	13,830	1	12,030	1	Cf			June 2, 1950.	
Do	do	Hvab	do	4,043	D	1.9	39.6	51.6	8.8	3.2					13,540	13,800	2	18,200	2	Cf (17), Cp (1)			Fiscal year 1950.	
Do	do	Hvab	2 by 4-inch	55	D	1.6	39.9	51.3	9.7	3.2					13,530	13,760	1	12,050	1	Cf			Fiscal year 1949.	
Do	do	Hvab	1 by 5-inch	333	D	1.5	39.9	52.0	8.1	3.5					13,640	13,840	1			Cf			Fiscal year 1950.	
Do	do	Hvab	0 by 2-inch	270	T	2.4	39.8	52.5	7.7	3.0					13,660	14,000	1	12,030	1	Cf			June 2, 1950.	

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample Description	Weight (lb)	Moisture (%)	Volatiles (%)	Fixed Carbon (%)	Calorific Value (Btu/lb)	Analysis Date	Notes	
Mount Clare: Lost Creek	3/4- by 3/4-inch	56	D	5.738, 8.51, 2.10, 0	3.4	12, 630, 13, 400	1	Fiscal year 1948.	
Nutter Fort: Nutter	1 1/2-inch lump	30	T	1.541, 6.49, 8.6	4.3	13, 600, 13, 800	1	Mar. 27, 1950.	
	0 by 1 1/2-inch	20	T	4.039, 0.53, 2.7	3.8	13, 310, 13, 860	1	Do.	
	Run-of-mine (crushed to 2 1/2-inch)	2, 340	D	3.137, 2.52, 0.10, 8	3.1	12, 970, 13, 380	3	Fiscal year 1950.	
Oral Lake: Erie No. 2									
Shinnston: Scott No. 2	2- by 5-inch	150	T	1.640, 2.51, 2.8	6.2	13, 590, 13, 810	1	July 12, 1950.	
	do.	250	D	1.939, 3.52, 0.8	1.0	2, 2, 150	1	Fiscal year 1948.	
	do.	299	D	2.339, 3.52, 4.7	8.1	13, 660, 13, 980	3	Do.	
	1 1/4- by 5-inch	107	D	2.039, 3.54, 0.6	2.0	13, 720, 14, 050	1	Fiscal year 1950.	
	1 1/4- by 2-inch	107	D	2.040, 4.52, 0.7	2.1	13, 680, 13, 960	1	July 12, 1950.	
	1/2- by 1 1/4-inch	1, 631	T	2.939, 3.52, 7.4	2.5	13, 700, 14, 010	2	Fiscal year 1950.	
	0 by 1-inch	150	T	2.938, 3.54, 7.0	2.5	13, 400, 13, 990	1	July 12, 1950.	
	Run-of-mine (crushed to 2-inch)	225	T	1.940, 3.51, 8.0	2.9	13, 580, 13, 840	1	June 21, 1950.	
Vincent No. 4									
Spelter: Cliff	Run-of-mine	220	T	2.542, 3.50, 9.6	8.2	13, 820, 14, 170	1	May 2, 1950.	
Wilsonburg: Chieflain	2- by 8-inch	112	D	2.641, 6.49, 0.9	4.4	13, 220, 13, 570	1	Fiscal year 1948.	
	1 1/4- by 8-inch	300	T	2.238, 4.46, 7.1	5.3	12, 620, 12, 900	1	June 4, 1948.	
	Do.	100	T	2.740, 4.48, 11.1	4.2	12, 910, 13, 260	1	Do.	
	3/4- by 1 1/4-inch	175	D	3.938, 3.49, 11.1	4.0	12, 740, 13, 260	2	Fiscal year 1948.	
	Do.	300	T	4.739, 5.07, 11.3	4.0	12, 780, 13, 410	1	June 4, 1948.	
	0 by 3/4-inch	150	T	1.941, 1.49, 8.1	3.2	13, 450, 13, 710	1	Apr. 24, 1950.	
	2- by 5-inch	380	T	3.240, 3.50, 4.9	3.3	13, 210, 13, 640	1	Do.	
Wolf Summit: Gregory No. 3.	2- by 6-inch	6, 487	D	1.942, 1.49, 1.8	3.4	13, 430, 13, 690	16	Fiscal year 1950.	
KANAWHA COUNTY									
Aame: Aame No. 2	5-inch lump	80	T	2.335, 7.58, 0.6	6.3	13, 880, 14, 200	1	May 15, 1950.	
	3- by 5-inch	135	T	2.035, 6.57, 1.7	3.5	13, 830, 14, 100	1	Do.	
	2- by 3-inch	80	T	2.335, 5.56, 4.7	8.8	13, 680, 14, 000	1	Do.	
	0 by 2-inch	480	T	7.335, 9.57, 6.1	4.6	13, 010, 14, 030	1	Dec. 7, 1948.	
	Run-of-mine	50	T	5.234, 3.51, 0.14, 8	1.9	7.11, 930, 12, 590	1		
Big Chimney: Hanson No. 4.	do.	180	T	2.637, 8.55, 8.6	4.7	13, 780, 14, 140	1	May 18, 1950.	
Cedar Grove: Cedar Grove.									
Keyford: United No. 2	6-inch lump	165	T	2.136, 3.59, 1.4	4.6	14, 350, 14, 660	1	May 16, 1950.	
	3- by 6-inch	165	T	2.135, 2.59, 2.5	6.6	14, 160, 14, 470	1	Do.	
	2- by 3-inch	80	T	2.235, 1.58, 9.0	5.5	14, 100, 14, 410	1	Do.	
	0 by 2-inch	345	T	3.933, 7.57, 5.8	8.7	13, 320, 13, 860	1	Do.	
Olcott: Dorothy Dale	5-inch lump	35	T	3.439, 1.54, 9.6	6.0	13, 540, 14, 020	1	June 29, 1950.	
	2- by 5-inch	50	T	3.438, 0.54, 4.7	6.6	13, 290, 13, 760	1	Do.	
	do.	1, 722	D	3.037, 6.53, 9.8	5.5	13, 230, 13, 640	9	Fiscal year 1950.	
	0 by 2-inch	110	T	4.536, 5.51, 3.12, 2	7.7	12, 390, 12, 970	2	June 29, 1950.	
	do.	968	D	5.034, 8.50, 0.15, 2	8.8	11, 870, 12, 490	7	Fiscal year 1948.	
	do.	1, 105	D	5.035, 2.51, 8.13, 0	3.5	12, 200, 12, 840	4	Fiscal year 1949.	
	2- by 6-inch	1, 106	D	3.038, 1.55, 6.3	5.8	13, 570, 13, 990	1	Do.	
Reynolds: Reynolds	5-342	5, 342	D	3.337, 3.45, 0.7	6.6	13, 320, 13, 770	13	Do.	
	0 by 1 1/2-inch	4, 573	D	5.536, 7.52, 8.10, 5	8.8	12, 530, 13, 260	6	Fiscal year 1950.	
	0 by 1-inch	1, 228	D	5.538, 1.54, 4.7	5.8	13, 010, 13, 770	3	Fiscal year 1949.	
Sharon: Wymar No. 1	5-inch lump	175	T	2.837, 4.54, 3.8	8.3	13, 500, 13, 890	1	May 10, 1950.	
	2- by 5-inch	205	T	2.936, 6.54, 5.8	9.9	13, 380, 13, 780	1	Do.	
	2- by 3-inch	140	T	2.836, 7.52, 8.10, 5	1.1	13, 120, 13, 500	1	Do.	
	0 by 2-inch	400	T	4.935, 5.53, 5.11, 0	1.3	12, 690, 13, 340	1	Do.	
Wimfred: Lower Kittanning (No. 5 Block) and Wimfred.	6-inch lump	140	T	3.436, 4.69, 1.4	4.5	13, 840, 14, 330	1	May 9, 1950.	
	4- by 6-inch	130	T	3.135, 6.58, 6.5	8.8	13, 690, 14, 130	1	Do.	
	3- by 5-inch	2, 005	T	2.534, 6.56, 4.9	0.7	13, 300, 13, 640	4	Fiscal year 1949.	
	3/4- by 4-inch	240	T	2.935, 0.55, 1.9	9.9	12, 910, 13, 430	1	May 9, 1950.	
	3/4- by 2-inch	338	T	2.334, 6.53, 8.1	6.8	12, 890, 13, 190	2	Fiscal year 1949.	
	0 by 3/4-inch	263	T	4.534, 3.55, 4.10, 3	8.8	12, 740, 13, 340	1	May 9, 1950.	

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.
 3 Numbers in parentheses indicate the number of determinations made.

TABLE 3.—Analyses of tittle and delivered samples during the fiscal years 1948-50—Continued

1	2	3	4	5	6	7	8	9	10	Ultimate, percent					Calorific value		17	18	19	20	21	22	23	24
										Moisture	Volatiles	Fixed carbon	Ash	Sulfur	Hydrogen	Carbon								
WEST VIRGINIA—Continued																								
LOGAN COUNTY—continued																								
Pecks Mill:	Alma	Hvab	Run-of-mine	60	T	2,939.4	54.1	6.5	1.7	5.3	78.1	1.6	6.8	13,670	14,070	12,310	1	1	1	1	Cf	6 1/2	46	June 27, 1950.
Bell	do	Hvab	do	30	T	3,138.8	55.1	6.1	1.3					13,730	14,180	12,520	1				Cf	46	Do.	
Craddock and Nelson	Eagle	Hvab	do	42	T	2,936.6	55.8	7.6	.9	5.2	77.2	1.5	7.6	13,430	13,830	12,780	1				Cf	5 1/2	51	June 30, 1950.
Mill Creek	do	Hvab	do	25	T	3,239.2	55.9	4.9	.9	5.4	79.9	1.6	7.5	13,860	14,310	12,700	1				Cf	5 1/2	50	June 28, 1950.
Sharon No. 1	do	Hvab	do	50	T	2,035.6	58.2	6.2	.6					14,000	14,290	12,910+	1				Cf			June 9, 1950.
Rita	do	Hvab	5-inch lump	100	T	1,357.5	58.2	6.1	.8					13,990	14,290	12,910+	1				Cf			Do.
Do	do	Hvab	0 by 5-inch	290	T	2,934.9	58.1	7.0	.7					13,690	14,100	12,910+	1				Cf	7 1/2	55	Do.
Do	do	Hvab	0 by 2-inch	557	D	2,137.7	56.8	5.5	.6					13,990	14,290	12,910+	2				Cf			Fiscal year 1948.
Slagle; McGregor	Lower Kittanning (No. 5 Block)		0 by 5-inch																					Do.
Stollings; Fort Branch	Chilton		0 by 1 1/2-inch	3,656	D	2,235.5	63.7	10.8	.7					13,080	13,320	4,280	2				Cf			Do.
MARION COUNTY																								
Farmington:	Pittsburgh		3/4- by 1 1/2-inch	40	D	1,377.7	53.2	9.1	2.3					13,410	13,690	1,215	1				Cf			Fiscal year 1950.
Jamison No. 9	do		0 by 1-inch	163	D	1,637.6	54.8	7.6	1.6					13,710	13,930	1,215	1				Cf			Do.
Do	do		Run-of-mine (crushed)	574	D	1,939.0	53.8	7.2	1.5					13,740	14,000	1,215	1				Cf			Do.
Four States; O'Donnell	do		to 2 1/2-inch																					Do.
MASON COUNTY																								
West Columbia:	do		1/4- by 1 1/2-inch (W and OT)	462	D	6,943.1	43.1	13.8	3.3					11,520	12,370	2,250	2				Cf			Fiscal year 1948.
Jeanne Anne	do		0 by 1 1/2-inch (W and OT)	10,509	D	5,943.3	42.9	13.8	3.2					11,590	12,320	2,250	17				Cf			Do.
Do	do		3/8- by 1 1/2-inch (W and OT)	1,743	D	5,444.1	44.1	11.8	3.4					11,920	12,600	3,240	1				Cf			Fiscal year 1949.
M'DOWELL COUNTY																								
Ashland:	Pocahontas Nos. 6 and 9		0 by 1 1/2-inch	445	D	5,619.1	69.1	11.8	.8					13,030	13,800	2,250	2				Cg			Do.
Ashland	do		do	5,202	D	6,219.5	71.2	9.3	.7					13,320	14,200	11,270	4				Cg			Fiscal year 1950.
Bradshaw:	Bradshaw		do	224	D	2,723.8	68.3	7.9	.7					14,030	14,420	2,250	2				Cg			Fiscal year 1949.
Do	do		do	202	D	2,424.2	68.1	7.7	.6					14,160	14,510	1,215	1				Cg			Fiscal year 1950.
Iaeger:	Douglas (Red Ash)		Run-of-mine	123	D	3,126.1	65.4	8.5	2.7					13,740	14,180	2,250	2				Cg			Fiscal year 1948.
Do	do		0 by 1 1/2-inch	988	D	4,526.1	62.7	11.2	1.8					13,060	13,680	2,250	2				Cg			Do.
Donald	do		3-inch lump (OT)	40	T	1,923.8	62.2	2.0	.6	5.0	7.4	1.7	3.3	15,050	15,340	1,215	1				Cg			Fiscal year 1949.
Do	do		1 1/4- by 3-inch (OT)	50	T	1,925.6	67.0	4.4	1.0					14,710	14,990	1,215	1				Cg			Do.
Do	do		0 by 1 1/2-inch	100	T	3,224.8	68.6	6.6	1.0					14,270	14,600	1,215	1				Cg			Do.
Krall Litz	do		2-inch lump	51	D	2,028.6	62.7	8.7	1.1					13,730	14,010	1,215	1				Cf	9	90	Do.
Do	do		0 by 1 1/2-inch	230	D	2,728.0	64.1	7.9	1.1					13,870	14,250	2,250	2				Cf, Cg			Fiscal year 1949.
Do	do		Run-of-mine	60	T	3,524.5	72.5	3.0	.6	4.9	86.5	1.7	3.3	14,620	15,140	1,240	1				Cg			Do.
Red Bird	do		do	366	D	2,326.2	67.4	6.1	1.4					14,230	14,570	3,290	3				Cg			Aug. 31, 1949.
Do	do		Run-of-mine (crushed)																					Fiscal year 1949.

Locality	Sample No.	Weight	Moisture	Vol. %	Calorific Value	Analysis	Notes	Date					
Do.	108	2.1	26.9	68.5	4.6	14,500	14,810	Do.					
Do.	116	2.9	26.5	66.4	7.1	13,960	14,380	Do.					
Do.	400	2.7	25.1	71.1	3.8	14,390	15,000	Fiscal year 1950.					
Landgraf: Vera Nos. 3 and 4.	50	2.4	17.8	76.9	5.3	1.2	2.8	14,490	14,840	Aug. 30, 1949.			
Do.	50	3.9	17.6	74.9	7.5	13,940	14,510	Do.					
Do.	50	4.6	18.1	74.6	7.3	13,900	14,570	Do.					
Do.	30	2.8	18.9	72.8	8.3	14,050	14,460	Do.					
Do.	250	4.6	18.1	75.7	6.2	14,060	14,740	Do.					
Mohegan: Panda No. 7	60	3.6	18.6	77.5	3.9	2.8	14,570	15,110	Sept. 13, 1949.				
Do.	150	3.6	18.2	77.1	3.0	13,500	14,000	Do.					
Do.	295	3.4	18.7	75.5	6.2	14,190	14,690	Fiscal year 1950.					
Panther: Douglas	49	2.2	28.0	66.5	5.5	14,310	14,630	Do.					
Do.	59	2.6	28.9	64.3	6.8	14,090	14,450	Do.					
Do.	979	2.5	26.3	67.0	6.7	14,090	14,450	Do.					
Do.	202	2.6	25.9	67.3	6.8	14,170	14,550	Do.					
Do.	38,835	3.3	27.9	64.3	7.8	13,770	14,240	Do.					
Premier: Premier No. 8.	52	3.5	19.0	74.9	6.1	14,300	14,810	Do.					
Squire: Jacob's Fork	50	1.7	21.4	75.7	2.9	3.0	15,020	15,270	Sept. 6, 1949.				
Do.	130	2.3	21.3	74.5	4.2	14,730	15,080	Do.					
Do.	160	3.9	20.1	73.8	6.1	14,210	14,790	Do.					
Do.	250	3.9	21.3	72.6	6.1	14,200	14,770	Do.					
Vivian: Peerless Nos. 4 and 5.	9,075	1.8	20.5	72.3	7.2	14,080	14,340	Fiscal year 1949.					
Do.	9,026	2.5	19.8	74.3	5.9	14,250	14,620	Fiscal year 1950.					
Do.	1,199	1.4	18.4	72.7	8.9	14,100	14,300	Do.					
Warriermine: Jean No. 6.	112	4.4	18.9	74.0	7.1	13,970	14,620	Fiscal year 1949.					
Do.	7,034	3.6	19.2	73.7	7.1	14,120	14,650	Fiscal year 1950.					
MERCER COUNTY													
Goodwill: Louisville	62	2.2	17.6	77.0	5.4	14,500	14,830	Fiscal year 1949.					
Do.	60	8.17	4.76	1.6	5	14,520	14,640	Do.					
Do.	55	3.2	16.7	75.4	7.9	13,950	14,410	Fiscal year 1950.					
Do.	126	2.4	16.9	75.9	7.2	14,210	14,560	Fiscal year 1948.					
Mateaks: Danspur No. 2	100	2.1	16.5	72.4	11.1	13,650	13,940	Nov. 16, 1949.					
Do.	250	3.0	17.6	77.6	4.8	8	4.3	86.5	1.2	2.4	14,560	15,000	Do.
MINGO COUNTY													
Justice: Buchannon	40	3.5	30.3	59.9	9.8	9	4.9	77.0	1.8	5.6	13,250	13,728	Sept. 12, 1949.
Lando Mines: Lando No. 2	201	3.5	39.3	52.0	8.7	13,130	13,610	Fiscal year 1949.					
Do.	184	2.5	38.0	55.5	6.5	13,870	14,220	Fiscal year 1950.					
Do.	466	2.4	37.9	54.6	7.5	13,740	14,070	Do.					
Do.	192	2.4	37.8	55.3	6.9	13,840	14,180	Do.					
Lobata: Cedar Grove	5,472	1.9	37.0	55.1	7.9	13,660	13,920	Do.					
Do.	1,863	3.6	36.4	55.1	8.5	13,320	13,820	Do.					
Do.	933	3.2	37.6	45.6	16.8	11,850	12,240	Fiscal year 1949.					
Nolan: Big Split: Thacker	131	2.8	35.1	57.0	7.9	13,460	13,850	Fiscal year 1950.					
Puritan Mines: Puritan	162	2.7	36.6	54.3	9.1	13,390	13,760	Do.					
Do.	987	2.7	37.9	54.3	7.8	13,570	13,950	Do.					
Do.	984	2.1	38.0	56.6	6.5	13,960	14,260	Do.					
Do.	245	2.1	38.0	55.9	9.0	13,530	13,820	Do.					
Do.	690	2.1	38.8	56.1	7.1	13,840	14,140	Fiscal year 1949.					

* Numbers in parentheses indicate the number of determinations made.

† See Explanation of Symbols (p. 5).

‡ Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample	Run-of-mine	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis	Notes	Date
Lowsville:	Eleanor	Run-of-mine	1,835	6.7	28.9	56.6	14.5	2.4	Cf (1), Cg (2) Cp, Cf, Cg	Fiscal year 1948.
	Do.	do.	2,666	8.5	30.4	56.9	12.7	1.8		Fiscal year 1949.
Maidsville:	Mon.	2- by 5-inch	14,680	2.0	33.8	55.2	11.0	1.8	Cg (26), Cf (20)	Fiscal year 1950.
	Do.	0 by 2-inch	34,937	3.3	32.5	54.7	12.8	1.9		Do.
Rosedale Mines	Mon-Ark No. 2.	Run-of-mine	660	2.6	33.0	53.9	13.1	2.2	Cg (34), Cf (15) Cg	Dec. 18, 1947.
	Do.	2- by 5-inch	926	1.5	34.9	54.6	10.5	2.1		Fiscal year 1950.
Morgantown:	Alport	3/4- by 3/4-inch	147	1.6	33.9	54.1	12.0	2.4	Cf	Fiscal year 1948.
	Do.	0 by 2 1/2-inch	417	1.4	34.5	56.2	9.3	2.1		Fiscal year 1950.
Mon-Ark No. 3.	Pittsburgh	Run-of-mine	250	2.9	35.1	55.6	9.3	2.0	Cf	June 12, 1950.
	Do.	do.	200	4.5	35.4	51.8	12.8	4.4		8
Mon-Ark No. 4.	Pittsburgh	1 1/4- by 5-inch	713	6.0	32.8	52.3	14.9	2.4	Cf, Cg	Jan. 21, 1948.
	Do.	do.	1,039	5.1	34.0	50.2	15.8	2.2		65
Osage:	Louis	0 by 2-inch	1,039	5.1	34.0	50.2	15.8	2.2	Cf	Do.
	Do.	0 by 1 1/4-inch	227	5.5	32.8	53.2	14.0	2.9		Do.
Richard: Bethlehem	No. 21.	Run-of-mine	1,491	4.2	35.4	53.1	11.5	3.3	Cf (3), Cp (1) Cf (16)	Fiscal year 1949.
	Do.	do.	1,191	2.0	35.7	51.1	13.2	2.5		Fiscal year 1950.
Stewartstown:	Raymond No. 2.	Run-of-mine (crushed to 1 1/4-inch)	4,924	7.7	31.6	52.5	15.9	2.1	Cg (12), Cg (2) Cg	Fiscal year 1948.
	Do.	Run-of-mine	260	2.9	34.8	54.8	10.4	2.4		Fiscal year 1949.
Nicholas County	Cornelia: Cornelia	Run-of-mine (crushed to 2-inch)	629	7.8	28.8	60.4	9.8	.8	Cg (5), Cf (1)	Fiscal year 1948.
	Do.	6-inch lump (OT)	30	3.3	27.3	71.1	1.6	.5		Jan. 9, 1950.
Lee:	Quinwood No. 2.	3- by 6-inch (W and OT)	30	3.7	27.3	69.7	3.0	.5	Cg	Do.
	Do.	1 1/2- by 3-inch (W and OT)	100	4.1	27.3	68.8	3.9	.4		Do.
Quinwood Nos. 3 and 4.	Do.	3/4- by 3/4-inch (W and OT)	100	5.2	27.0	68.2	4.2	.5	Cg	Do.
	Do.	0 by 1/2-inch	490	5.4	27.2	68.4	4.4	.5		Do.
Muddy:	Delmont No. 11.	2 1/4- by 5-inch	108	2.3	35.4	59.3	5.3	.8	Cf (4), Cp (1) Cg	Fiscal year 1949.
	Do.	1 3/4- by 6-inch	278	2.0	34.1	57.4	8.5	.9		Do.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries a veraged.

3 Numbers in parentheses indicate the number of determinations made.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Locality	Sample Description	Weight	Moisture	Volatiles	Fixed Carbon	Calorific Value	Analysis Date	Notes
TAYLOR COUNTY	Peelless	168	2.533	63.1	3.6	6	14,440	14,810
	do	60	2.433	61.3	5.0	7	14,110	14,460
	do	30	4.822	62.9	4.9	9	5.1	82.0
	do	181	5.631	7.61.5	6.8	9	13,390	14,180
	Pittsburgh	150	2.035	2.53.0	8.8	2.5	13,700	13,970
	do	150	4.636	6.54.0	9.4	2.7	13,140	13,780
	do	490	1.937	2.52.5	10.3	4.4	13,490	13,740
	do	50	2.237	6.54.2	8.2	3.1	4.7	13,790
	do	75	1.938	8.53.2	8.0	3.4	4.3	13,810
	do	50	1.937	4.54.3	8.3	3.6	13,710	13,980
	do	290	3.236	1.55.0	8.9	2.4	5.1	176.1
	do	450	2.436	9.55.1	8.0	2.1	5.2	177.8
	do	6,192	1.836	6.53.9	9.5	2.5	13,570	13,820
	do	704	2.333	0.56.0	9.0	2.2	13,520	13,840
	do	250	3.924	7.69.5	5.8	6	4.8	82.9
	do	700	3.223	9.65.1	11.0	2.7	4.5	76.8
	do	4,591	2.824	0.62.8	13.2	1.6	12,680	13,050
	TUCKER COUNTY	Upper Freeport	12,745	5.724	9.62.8	12.3	1.7	12,360
do		40	5.026	6.64.2	9.2	1.2	4.7	79.6
do		100	4.021	2.70.9	7.9	9	4.6	82.5
do		100	3.123	0.65.2	11.8	1.3	13,210	13,630
do		85	3.822	3.66.1	11.6	1.3	4.5	78.3
do		14	3.522	0.68.9	9.1	7	4.6	81.2
do		80	2.824	0.63.2	12.8	7	4.4	76.9
do		1,531	1.938	3.53.8	6.9	8	13,860	14,130
do		369	2.535	9.55.8	8.4	1.9	13,460	13,800
do		35	3.438	4.51.8	8.6	2.9	5.1	75.7
do		380	3.936	6.53.5	7.9	1.9	6.3	13,370
do		30	2.437	8.54.4	7.9	2.7	5.2	76.7
do		51	1.737	8.53.6	8.5	2.1	13,500	13,830
do		48	3.638	8.52.8	8.3	3.1	13,150	13,640
do		65	2.137	6.53.8	8.9	2.9	13,510	13,800
do		30	2.137	1.54.2	8.7	2.6	13,460	13,750
do		96	1.736	7.53.3	10.0	2.6	13,270	13,490
do		85	2.037	8.54.8	7.3	2.3	13,600	13,870
do	2,307	2.537	8.53.9	8.2	2.4	13,500	13,850	
do	100	3.037	8.54.3	8.3	2.5	13,320	13,720	
do	240	2.937	0.54.4	8.6	2.4	13,350	13,730	
do	1,000	5.735	5.52.7	11.8	2.2	4.9	73.6	
do	390	4.635	8.54.8	9.4	1.9	5.0	75.5	
do	5,059	2.137	7.54.2	8.1	2.8	13,540	13,850	
do	14,776	2.136	8.53.7	9.4	3.1	13,320	13,610	
do	2,832	2.736	0.54.7	9.3	2.6	13,260	13,650	

* Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).
 2 Numbers above 1 indicate the number of deliveries averaged.

ANALYSES OF TIPPLE AND DELIVERED SAMPLES OF COAL

Wyoming: Wyoming No. 1	Sewell	Mvb	8-inch lump (OT) 3- by 8-inch (OT) 1 1/4- by 3-inch (W) 5/8- by 1 1/4-inch (W) 0 by 5/8-inch	T	2.1 2.0 3.1 3.6	22.4 17.8 21.5 22.1	47.8 34.8 73.5 173.0	2.8 3.4 4.9 4.9	4.8 7.7 6.0 6.6	4.8 87.2 1.6	2.9 14.9 14.4 14.3	910 15,230 15,130 14,930 14,910 14,910 14,320	12,420 12,600 12,680 12,750 12,730	1 1 1 1 1	Cg Cg Cg Cg Cg	Aug 15, 1949. Do. Do. Do. Do.	
WYOMING																	
CARBON COUNTY																	
Hanna:	Lower Bench Finch		1 1/4- inch lump	95	6.0	42.6	48.6	8.8	0.7		11,720	12,470	1	NAB	Fiscal year 1950.		
Do.	do		3- by 7-inch	92	9.5	43.6	49.7	6.7	7		11,500	12,710	1	NAB	Fiscal year 1949.		
Do.	do		3- by 6-inch	1,929	7.7	44.9	47.6	7.5	5		11,630	12,600	9	NAB	Fiscal year 1950.		
Do.	do		1 1/4- by 3-inch	4,171	8.6	45.8	45.1	9.1	7		11,440	12,520	10	NAB	Do.		
Do.	do		1 1/4- by 3-inch	1,192	7.6	44.6	47.6	7.8	6		11,730	12,700	2	NAB	Fiscal year 1949.		
Do.	do		1 1/4- by 3-inch	1,553	7.5	46.4	47.6	8.1	6		11,740	12,680	1	NAB	Do.		
Do.	do		do	3,999	8.6	44.5	45.4	10.1	6		11,280	12,320	11	NAB	Fiscal year 1948.		
Do.	do		1/4- by 1 1/4-inch	5,062	9.0	46.1	43.8	10.1	7		11,280	12,280	10	NAB	Fiscal year 1950.		
Do.	do		do	152	7.9	42.9	49.4	7.7	6		11,530	12,400	1	NAB	Fiscal year 1949.		
Do.	do		0 by 1 1/4-inch	793	7.9	42.9	49.4	7.7	6		11,600	12,600	1	NAB	Fiscal year 1949.		
Do.	do		0 by 1 3/8-inch	12,209	9.7	43.8	47.6	8.6	8		11,290	12,260	12	NAB(26), NAA(1)	Fiscal year 1950.		
Do.	do		0 by 1 3/8-inch (OT)	46	12.4	45.9	47.5	6.6	1.0		11,600	12,880	1	NAB	Do.		
Do.	do		0 by 1 1/4-inch	3,600	7.5	42.9	44.8	12.3	8		11,040	11,940	43	NAB(37), NAA(9), Cp(1)	Fiscal year 1948.		
Do.	do		do	2,307	9.7	44.2	46.4	9.4	7		11,000	12,290	3	NAB	Fiscal year 1950.		
Do.	do		0 by 3/4-inch	761	9.9	41.9	46.5	11.6	1.1		10,890	12,090	3	NAB	Do.		
Do.	do		Run-of-mine (crushed to 2-inch)	1,077	13.7	44.1	48.7	7.2	5		10,880	12,600	1	NAB	Do.		
Nugget																	
Do.	6- by 12-inch		6- by 12-inch	150	6.9	42.8	49.8	7.4	4		11,380	12,220	1	NAB	Fiscal year 1949.		
Do.	do		3- by 10-inch	45	11.4	46.3	47.4	6.3	4		11,300	12,760	1	NAB	Fiscal year 1950.		
Do.	do		3- by 8-inch	24,821	11.4	45.7	48.9	5.4	4		11,360	12,850	29	NAB	Do.		
Do.	do		1 1/2- by 7-inch	239	11.5	43.8	50.1	6.1	4		11,220	12,670	1	NAB	Fiscal year 1949.		
Do.	do		1 1/2- by 6-inch	50	10.4	45.7	48.5	5.8	3		11,520	12,860	1	NAB	Fiscal year 1948.		
Do.	do		do	494	10.0	46.5	47.1	6.4	5		11,330	12,580	1	NAB	Fiscal year 1948.		
Do.	do		1 1/2- by 4-inch	283	10.3	45.9	47.2	6.9	4		11,410	12,720	1	NAB	Fiscal year 1949.		
Do.	do		1 1/2- by 3-inch	235	14.0	45.6	48.8	5.6	5		11,080	12,820	1	NAB	Fiscal year 1948.		
Do.	do		0 by 1 3/8-inch	322	10.6	41.6	50.6	7.8	5		11,140	12,460	2	NAA, NAB	Fiscal year 1949.		
Do.	do		do	400	12.4	43.5	47.8	8.7	6		10,700	12,210	2	NAB	Fiscal year 1950.		
Do.	do		do	15,785	11.9	44.4	48.2	7.4	5		10,890	12,360	8	NAB(8), NAB(13)	Fiscal year 1949.		
Do.	do		0 by 1 1/2-inch	2,182	12.2	44.4	47.4	8.2	5		10,820	12,320	13	NAA(2), NAB(6)	Fiscal year 1950.		
Do.	do		do	2,592	10.7	45.5	47.5	7.0	5		11,130	12,460	2	NAB	Fiscal year 1949.		
Do.	do		0 by 1-inch	1,151	13.8	43.7	48.5	7.8	5		10,660	12,370	2	NAB	Do.		
Do.	do		0 by 3/4-inch	1,200	13.6	44.3	48.9	6.8	5		10,840	12,550	2	NAA, NAB	Fiscal year 1949.		
Do.	do		0 by 1 1/2-inch	1,105	12.5	40.3	48.5	11.3	8		10,530	12,030	2	NAB	Fiscal year 1948.		
Do.	do		0 by 1 1/2-inch	1,290	10.8	40.3	47.2	12.5	6		10,480	11,750	4	NAB	Fiscal year 1949.		
HOT SPRINGS COUNTY																	
Gebo:	Nos. 3 and 5		10-inch lump	12	15.9	38.9	54.6	6.5	7		10,750	12,780	1	NAB	Jan. 12, 1948.		
Do.	do		6- by 10-inch	15	16.1	39.5	54.3	6.2	6	5.0	73.4	1.3	13.5	1	NAB	Do.	
Do.	do		1 1/2- by 6-inch	40	14.8	39.3	53.8	6.9	6		10,850	12,730	1	NAB	Do.		
Do.	do		do	252	10.9	41.2	50.8	8.0	7		11,210	12,580	4	NAB	Fiscal year 1948.		
Do.	do		0 by 1 1/2-inch	35	15.3	37.3	50.5	12.2	7		10,130	11,950	1	NAB	Jan. 12, 1948.		
Do.	do		do	449	14.7	38.3	50.7	11.0	7		10,360	12,140	5	NAB(4), NAA(1)	Fiscal year 1948.		
LINCOLN COUNTY																	
Brilliant:	Frontier No. 1		1 1/2- by 8-inch	57	4.0	44.5	47.7	7.8	6		12,380	12,900	1	AF	Fiscal year 1948.		
Do.	do		0 by 1 1/2-inch	49	4.5	43.9	46.9	9.2	8		12,180	12,760	1	Cp	Do.		
Do.	do		do	408	8.2	42.5	48.1	9.4	8		11,710	12,760	7	AF(1), Cp(6)	Do.		
Do.	do		do	399	9.2	41.8	48.0	10.2	9		11,380	12,830	6	AF(2), Cp(1), NAB(3)	Fiscal year 1949.		
Do.	do		do	1,116	13.5	43.4	51.8	4.8	6		11,020	12,740	3	NAB(2), NAA(1)	Do.		

3 Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

Do	do	64	D	15.3	41.6	54.8	3.6	7	11,600	13,170	12,230	1	NAB	Fiscal year 1948.	
Do	do	44	D	14.8	42.2	53.4	4.4	9	11,560	13,080	12,080	1	NAB	Fiscal year 1949.	
Do	do	25	T	16.4	41.0	54.8	4.4	9	1.6	13.9	10,940	13,080	1	NAB	Apr. 27, 1948.
Do	do	2,505	D	13.1	40.5	53.3	6.2	1.0	11,110	12,790	12,150	1	NAB	Fiscal year 1948.	
Do	do	102	D	14.8	40.6	52.3	7.1	1.6	10,750	12,620	5	1	NAB	Fiscal year 1949.	
Do	do	5,475	D	15.6	41.4	52.1	6.5	1.3	10,730	12,710	30	1	NAB (28), Af (1), NAA (1)	Fiscal year 1950.	
Do	do	99	D	15.5	41.7	52.6	5.7	1.1	10,770	12,740	12,100	1	NAB	Fiscal year 1948.	
Do	do	201	D	16.0	41.2	51.8	7.0	1.0	10,630	12,660	4,260	2	NAB	Fiscal year 1949.	
Do	do	53	D	19.3	39.7	54.0	6.3	1.3	10,220	12,660	12,100	1	NAB	Do.	
Do	do	15	T	18.3	39.6	53.7	6.7	1.2	10,350	12,700	1,230	1	NAB	Apr. 27, 1947.	
Do	do	465	D	4.2	42.3	51.8	5.9	9	12,700	13,260	3	1	Cp	Fiscal year 1948.	
Do	do	54	D	5.0	42.9	52.3	4.8	8	12,820	13,500	12,910	1	Cp	Do.	
Do	do	306	D	4.7	44.1	52.5	5.4	9	12,740	13,370	4	2	Cp	Do.	
Do	do	103	D	7.5	42.1	52.7	5.2	1.0	12,370	13,370	2,230	2	Cf	Do.	
Do	do	74	D	6.3	42.9	53.4	3.7	1.2	12,730	13,590	2	1	Cp	Fiscal year 1950.	
Do	do	1,081	D	5.8	43.5	53.3	3.2	9	12,920	13,720	5	1	Cp	Fiscal year 1948.	
Do	do	404	D	5.9	42.0	53.1	4.9	1.0	12,690	13,490	4	1	Cp	Do.	
Do	do	1,969	D	7.1	42.0	53.7	4.3	9	12,610	13,570	18	1	Cp (17), Af (1)	Fiscal year 1949.	
Do	do	2,359	D	9.8	41.7	53.2	5.1	1.1	11,950	13,250	1	1	Cp	Fiscal year 1948.	
Do	do	2,117	D	6.7	41.0	52.9	6.1	1.2	12,390	13,280	3	1	Cp	Fiscal year 1949.	
Do	do	2,399	D	6.4	41.4	51.6	7.0	1.2	12,260	13,100	6	1	Cp	Fiscal year 1950.	
Do	do	151	D	9.2	42.4	49.3	8.3	8	11,660	12,840	2	1	Cp	Fiscal year 1948.	
Do	do	105	D	12.8	42.7	51.9	5.4	9	11,550	13,240	1	1	Cp	Fiscal year 1949.	
Do	do	15	T	10.8	44.2	53.3	2.5	8	12,290	13,770	1,230	1	Cp	Jan. 19, 1948.	
Do	do	40	T	11.3	44.4	53.7	1.9	8	12,270	13,830	1,230	1	Cp	Do.	
Do	do	40	T	10.9	44.4	50.5	5.4	8	11,860	13,310	1,270	1	Cp	Do.	
Do	do	75	T	11.5	42.2	51.0	6.8	1.2	11,600	13,110	1,240	1	Cp	Do.	

ALASKA

MATANUSKA FIELD														
Jonesville: Evan Jones.		24,850	D	8.8	41.5	45.5	13.0	.3	11,370	12,470	26,260	8	Cf (11), Cp (15)	Fiscal year 1950.

3 Numbers in parentheses indicate the number of determinations made.

1 See Explanation of Symbols (p. 5).

2 Numbers above 1 indicate the number of deliveries averaged.

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