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# The Kanawha and New River COAL FIELDS OF WEST VIRGINIA, U.S.A





Robinson, Neil  
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# THE KANAWHA AND NEW RIVER COAL FIELDS

OF

WEST VIRGINIA, U. S. A.

**T**HE areas shown on the two maps printed herein represent an aggregate of about 840 square miles, or 540,000 acres. Within their boundary lines a greater variety of coals are produced, and a greater number of coal seams are being mined, than have ever been found elsewhere in the world in a territory of similar size.

Eleven distinct seams have been opened upon a commercial scale, as follows:

KANAWHA SERIES:	{	No. 5, or Block.
		Belmont.
		Coalburgh.
		Winifrede.
		Cedar Grove.
		No. 2, or Gas.
		Powellton.
NEW RIVER SERIES:	{	No. 1, or Eagle.
		Sewell.
		Beckley.
		Fire Creek.

The coals represented in the foregoing list are uniformly low in ash and sulphur, and cover every known requirement on the part of the consumers, whether it may be for domestic use, blacksmithing, coke ovens, by-product plants, gas making, or the generation of steam.

As a matter of convenience, the different seams will be considered in the order in which they have their bedding, geologically, commencing with the youngest and highest seam in the formations.

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# KANAWHA COAL FIELD.

## No. 5, OR BLOCK COAL.

The No. 5 Block is found in the crests of the hills near the Great Kanawha River, at Edgewater, Crescent, Mecca and Eureka. In thickness the seam shows a section at one of the principal mines as follows:

Coal . . . . .	1' 7"	————— EUREKA COAL. —————				
Shale . . . . .	1 1/2"		Coke from Machine Cuttings.			
Coal . . . . .	5' 10"	Moisture . . . . .	0.67 . . . 0.98			
—————		Volatile matter . . . . .	40.80 . . . 0.992			
Total . . . . .	7' 6 1/2"	Fixed Carbon . . . . .	57.72 . . . 93.183			
ANALYSIS.						
MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	Ash . . . . .	1.49 . . . 5.03
0.84	37.78	57.08	4.30	0.84	Sulphur . . . . .	0.61 . . . 0.697
					Phosphorus . . . . .	. . . . . 0.003

This Coal is bright in appearance, stands handling and transportation, mines out in large blocks, and is shipped almost exclusively for high-grade domestic trade.

## MINES OPERATING IN THE No. 5 BLOCK SEAM.

### No. 5 SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Great Kanawha	The Great Kanawha Colliery Co., Ltd..	Mt. Carbon..	Kanawha Fuel Co. . .	Charleston, W. Va.
Edgewater . . . . .	The Carver Bros. Co..	Eagle . . . . .	" " . .	" "
Mecca . . . . .	Mecca C'l & Coke Co..	Montgomery.	" " . .	" "
Crescent . . . . .	W. R. Johnson . . . . .	Crescent . . . . .	" " . .	" "
Gordon, No. 5..	Gordon C'l & Coke Co	Eagle . . . . .	Ches. & Ohio Coal & Coke Co. . . . .	Cincinnati, O.

Actual daily loading capacity, 775 tons.

## BELMONT SEAM.

The Belmont coal outcrops from 100 to 120 feet lower in the hills than the No. 5 Block. It has been mined in the Kanawha Valley for more than twenty-five years, and ranks as one of the standard domestic coals. The coal is free-burning, leaves very little ash, and stands transportation remarkably well. Quite a large trade has been developed throughout the Northwest and West, and regular shipments are made each year to points beyond Omaha. Only coal of the finest quality could stand the freightage for so great a distance.

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## MINES OPERATING IN THE BELMONT SEAM.

### BELMONT SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Belmont . . . . .	Belmont Coal Co . . . .	Crown Hill . .	Kanawha Fuel Co . . .	Charleston, W. Va.
Horton . . . . .	Cardiff Coal Co. . . . .	Charleston . .	Kanawha Fuel Co . . .	" "
Oakley . . . . .	Cardiff Coal Co. . . . .	Charleston . .	Kanawha Fuel Co . . .	" "
Davis . . . . .	Davis Coal Co. . . . .	Ohley . . . . .	Kanawha Fuel Co . . .	" "

Actual daily loading capacity, 2,075 tons. Thickness of seam, 4 ft. to 6 ft.

#### TYPICAL ANALYSIS. (BELMONT MINE.)

MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
1.33	35.26	59.09	4.32	0.71	14.441

## COALBURGH SEAM.

In the year 1853 or near, the existence of this valuable seam became generally known, and mines were opened at the village of Coalburgh (from which the seam takes its name) for the purpose of loading barges on the Great Kanawha River. Operations were continued until the outbreak of the Civil War, when they ceased for about four years. In 1865 work was resumed, and the original Coalburgh mines have been worked continuously ever since. The coal met with great favor wherever introduced, and new mines have been opened on Cabin Creek, Paint Creek and elsewhere to meet the growing demand. Shipments are made as far East as Boston, South into the Carolinas, and beyond the Missouri River in the West. It is a firm, strong coal, that is much prized for open grates.

## MINES OPERATING IN THE COALBURGH SEAM.

### COALBURGH SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Scranton . . . . .	Scranton Splint C'l Co	Mucklow . . . .	Kanawha Fuel Co . . .	Charleston, W. Va.
Paint Creek . . . .	Paint Creek Coal Co.	Mucklow . . . .	" "	" "
Banner . . . . .	Banner Coal Co. . . . .	Mucklow . . . .	" "	" "
Greenbrier . . . . .	Greenbrier Coal Co..	Pratt . . . . .	" "	" "
Wacomah . . . . .	Wacomah Coal Co. . . .	Pratt . . . . .	" "	" "
Belmont . . . . .	Belmont Coal Co. . . . .	Crown Hill . .	" "	" "
Dry Branch . . . . .	Dry Branch Coal Co.	Dry Branch . .	" "	" "
Ronda . . . . .	Coalburgh Colliery Co	Ronda . . . . .	" "	" "
Horton . . . . .	Cardiff Coal Co. . . . .	Charleston . .	" "	" "
Ruby . . . . .	Ruby Coal Co. . . . .	Decota . . . . .	" "	" "
Standard . . . . .	Standard Splint & Gas Coal Co. . . . .	Pratt . . . . .	" "	" "
Acme . . . . .	Shonk-Garrison Co..	Acme . . . . .	Kan. Coal & Coke Co.	Cincinnati, O.

Actual daily loading capacity, 4,575 tons. Thickness of seam, 4 ft. to 6½ ft.

ANALYSES.

MINE.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
Acme . . . . .	0.72	33.88	60.81	4.58	0.61	14.645
Coalburgh. . . . .	0.77	36.79	56.22	6.22	0.85	14.051
Ronda . . . . .	0.69	35.56	58.43	5.22	0.93	14.738
Scranton . . . . .	0.46	36.09	54.79	8.66	0.74	14,166
Belmont. . . . .	1.21	37.67	57.93	3.19	0.64	14.856

WINIFREDE SEAM.

This is another of the pioneer seams in the Kanawha Valley, the original Winifrede Mines on Fields Creek having been opened just fifty years ago. It is the lowest member of the Splint, or Block Coal, series. Originally, the coals which we now call splints were always referred to as semi-cannels, and the latter name should have been retained, as it is entirely applicable to them. One of the characteristics of the coal is the extreme length of the flame, with intense heating power. This makes the seam doubly valuable, inasmuch as its firmness of texture gives it a place as a domestic fuel in addition to its applicability for the generation of steam.

MINES OPERATING IN THE WINIFREDE SEAM.

WINIFREDE SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Montgomery . . .	Montgomery Coal Co.	Montgomery.	Kanawha Fuel Co. . .	Charleston, W. Va.
Chesapeake . . . .	Chesapeake Mining Co. . . . .	Handley . . . .	“ “ . .	“ “
Excelsior . . . . .	The Mount Carbon Co., Ltd. . . . .	Powellton. . .	.....	.....
Winifrede . . . . .	Winifrede Coal Co. . .	Winifrede. . .	Winifrede Coal Co. . .	Cincinnati, O.
Marmet . . . . .	The Marmet Co. . . . .	Marmet. . . . .	The Marmet Co. . . . .	“ “

Daily loading capacity, 4,350 tons.

ANALYSES.

MINE.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
Winifrede. . . . .	1.06	36.14	57.82	4.98	0.70	14.362
Winifrede. . . . .	1.66	39.68	55.60	3.16	0.62	
Chesapeake . . . .	0.77	35.23	59.79	4.21	0.61	14.912

## NO. 2 GAS SEAM.

The history of the coal industry in the Kanawha District does not show anything more remarkable than the great and rapid development of mines in this fine seam. Commencing in a modest way some years ago, this coal was sent forth to enter into competition with the standard Youghiogheny, or Pittsburgh, in some of the nearest markets, principally Cincinnati. From year to year the demand increases and the markets were extended, until at this writing forty miles are in operation on the line of the C. & O. R. R. and their product is being distributed from tide water in the East to the Great Lakes in the West. Car supplies are furnished by the railway company on the basis of an actual loading capacity of 17,775 tons per day for the coal alone, and without including the product of the coke ovens.

There are two causes for this large production, viz.: the high-grade quality of the output, and economical mining conditions. The general horizon of the seam at the points where it has its best development is a short distance above stream level, and the operators have the advantages of natural drainage, short inclined planes and working faces, from 5 ft. to 6 ft. 6 in. in height.

The coal is primarily a steam producer. For this particular purpose it has been tested thoroughly, and from 80% to 85% of the existing tonnage is being used to fill contracts and orders from railway companies, electric lighting and power plants and large manufacturing concerns. All through the West and Northwest and on the Great Lakes the No. 2 Gas is being used as a steam fuel. Sales offices are now maintained in New York, Newport News, Richmond, Cincinnati, Toledo, Detroit and Chicago, and distributing docks have been bought in Milwaukee, principally for the handling of this coal.

Another value which the No. 2 Gas possesses is its fitness for gas making. Working tests have been made in a number of cities, and one large gas company has recently entered into a formal contract for 600,000 tons, to be supplied within five years.

About 60,000 tons were carbonized in by-product ovens during the year 1903 with very successful results. A sample of coke taken from a car in transit, as representing the market, and not the theoretical grade, analyzed Fixed Carb. 87.98, Vol. and Mois. 3.44, Ash 7.80, Sulphur 0.78.

The adaptability of this coal for a variety of purposes makes it a popular grade for dealers to handle, as it enters into service for steam, coking, blacksmithing, gas making, by-product and domestic uses.

# MINES IN OPERATION IN THE NO. 2 GAS SEAM.

## NO. 2 GAS SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Great Kanawha	The Great Kanawha Colliery Co., Ltd..	Mt. Carbon..	Kanawha Fuel Co...	Charleston, W. Va.
Kimberly.....	Cardiff Coal Co.....	Charleston ..	“ “ ...	“ “
Columbia.....	Cardiff Coal Co.....	Charleston ..	“ “ ...	“ “
Windsor.....	The Carver Bros. Co.	Eagle.....	“ “ ...	“ “
Mecca.....	Mecca C'l & Coke Co	Montgomery.	“ “ ...	“ “
Crescent.....	W. R. Johnson.....	Crescent ....	“ “ ...	“ “
Chesap. No. 2..	Chesapeake M'ng Co.	Handley ....	“ “ ...	“ “
Greenbrier ....	Greenbrier Coal Co..	Pratt.....	“ “ ...	“ “
Wake Forest...	Wake Forest M'g Co.	Forest.....	“ “ ...	“ “
North Carbon..	Carbon Coal Co.....	Carbon.....	“ “ ...	“ “
South Carbon..	Carbon Coal Co.....	Carbon.....	“ “ ...	“ “
W. Va. No. 1..	W. Va. Colliery Co..	Decota.....	“ “ ...	“ “
W. Va. No. 2..	W. Va. Colliery Co..	Decota.....	“ “ ...	“ “
United.....	United Colliery Co..	Decota.....	“ “ ...	“ “
Belleclaire.....	Belleclaire Coal Co ..	Decota.....	“ “ ...	“ “
Holly.....	Holly Coal Co ..	Leewood....	“ “ ...	“ “
Climax.....	Cardiff Coal Co.....	Charleston ..	“ “ ...	“ “
Quarrier.....	Quarrier Coal Co....	Wake Forest.	“ “ ...	“ “
Republic No. 1.	Republic Coal Co....	Carbon.....	“ “ ...	“ “
Republic No. 2.	Republic Coal Co....	Carbon.....	“ “ ...	“ “
Gamoca.....	Gamoca Coal Co....	Gamoca.....	.....	.....
Gordon No. 2..	Gordon C. & C. Co..	Eagle.....	Ches. & O. C. & C. Co.	Cincinnati, O.
Gordon No. 3..	Gordon C. & C. Co..	Eagle.....	“ “ “	“ “
Gordon No. 4..	Gordon C. & C. Co..	Eagle.....	“ “ “	“ “
Caledonia.....	Cabin Cr. Mining Co.	Kayford.....	.....	.....
Cherokee.....	Cheokee Coal Co....	Leewood....	.....	.....
Empire.....	Shonk-Garrison Co..	Acme.....	Kanawha C. & C. Co.	Cincinnati, O.
Keystone.....	Shonk-Garrison Co..	Acme.....	Kanawha C. & C. Co.	Cincinnati, O.
Kayford.....	Cabin Cr. Mining Co.	Kayford.....	.....	.....
Raccoon.....	Raccoon Fork C'l Co.	Kayford.....	.....	.....
Thistle.....	Thistle Coal Co....	Kayford.....	.....	.....
Red Warrior...	Red Warrior Coal Co.	Leewood....	.....	.....
Edgewater ....	The Carver Bros. Co.	Eagle.....	Kanawha Fuel Co...	Charleston, W. Va.
Ansted.....	Gauley M'n C.&C.Co	Ansted.....	.....	.....

### ANALYSES. (No. 2 GAS.)

MINE.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
St. Clair.....	0.952	37.138	56.666	3.94	1.304	.....
Eureka.....	1.016	35.999	59.331	2.95	0.704	.....
South Carbon.....	0.956	33.524	58.922	5.35	1.248	.....
Wake Forest.....	0.78	34.660	56.675	7.005	0.88	.....
Empire.....	0.76	34.70	59.82	4.72	1.18	14.715
Mt. Carbon.....	0.71	34.04	61.79	3.46	0.98	.....
Ansted.....	0.89	32.29	65.41	1.41	0.91	14.951
Average 12 Mines..	0.762	35.163	60.123	3.607	1.009	.....

### (COKE.)

MINE.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.
Great Kanawha.....		0.25	92.48	7.27	0.85
Powellton.....	0.117	0.661	91.048	7.548	0.626



# POWELLTON SEAM.

On the upper part of Armstrong's Creek there is a large local development of a seam underlying the No. 2 Gas that has been given the name of "Powellton." It is mined quite extensively by the Mt. Carbon Co., Limited (Powellton P. O.), for use in their coke ovens, and has given excellent results, as may be noticed by reference to the following analyses by Andrew S. McCreath. By December 1st two new mines, known as Elk Ridge No. 1 and No. 2, will be put in operation by the Cardiff Coal Co. of Charleston.

## ANALYSES.

	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
Average 5 tests.	.0.98	34.18	62.29	2.35	0.63	15.239

## (COKE.)

PHOS.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.
.007	0.117	0.661	91.048	7.548	0.626

Shipping capacity 400 tons daily, exclusive of coke.

# NO. 1, OR EAGLE SEAM.

The working tests of the Eagle Seam show very little variation from the No. 2, and the remarks previously made in regard to the latter are applicable to the Eagle. From the fact that mining conditions add slightly to the cost of its production, the No. 1 Seam only represents a daily output of 1,950 tons, but the coal that is produced stands well in market. Special attention is called to the table of analyses and the low average percentage of ash and sulphur.

## MINES OPERATING IN THE NO. 1, OR EAGLE SEAM.

### NO. 1, OR EAGLE SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Great Kanawha	The Great Kanawha Colliery Co., Ltd..	Mt. Carbon..	Kanawha Fuel Co ....	Charleston, W. Va.
Windsor .....	The Carver Bros. Co.	Eagle.....	" "	" "
Edgewater.....	The Carver Bros. Co.	Eagle.....	" "	" "
Crescent .....	W. R. Johnson .....	Crescent ....	" "	" "
Imperial No. 1..	Imperial Coal Co....	Burnwell....	" "	" "
Imperial No. 2..	Imperial Coal Co....	Burnwell....	" "	" "

ANALYSES. (No. 1 EAGLE.)

MINE.	MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
St. Clair.....	1.17	37.61	55.10	6.12	0.99	.....
State test, 5 averages.	0.798	32.26	61.56	5.382	0.884	14.689
Great Kanawha.....	1.43	33.28	62.333	2.255	0.702	.....
Grose.....	1.232	33.798	61.512	2.85	0.608	.....
Imperial.....	0.85	33.52	61.694	3.205	0.731	.....

In the foregoing pages all of the seams mined in the Kanawha Valley on the line of the Chesapeake & Ohio Railway and its branches have been referred to, with the exception of the Cedar Grove and Peerless, which are not commercial factors at the present time.

It is a noteworthy fact that all of the coals of the Kanawha series are marketed beyond the boundaries of the State, and they are gaining their strongest foothold in the cities where competition from other and nearer fields is the most determined. Their success is due to their quality—their ability to stand working tests and comparisons with coals from other fields.



## NEW RIVER COAL FIELD.

The coals of this district belong to the Pottsville series, or No. 12, as correlated by David White and Marius R. Campbell, of the United States Geological Survey, and Dr. I. C. White, State Geologist of West Virginia.

Dr. White has very aptly described the series in his valuable Coal Report, page 612, and I take the liberty of making several quotations from his paper :

“ A peculiarity of the coals in the Pottsville series of West Virginia is their soft, columnar and typical coking structure, as opposed to the dry or ‘ block ’ coal type found in the coals of the same series, like the Sharon, Wellston, Jackson Hill, etc., occurring along the Northwestern margin of the Appalachian field, across Western Pennsylvania and Southeastern Ohio.

“ The purity of these early coals is also another characteristic, the percentages of both ash and sulphur being very low, and probably due to the fact that just previous to the spread of the early coal marshes, the floor of the Appalachian region had been sheeted with a thick deposit of clean gravel and sand, thus effectually covering up the muddy deposits of a previous epoch, so that the streams of that time which drained into the carboniferous bogs were pure and clear, like our mountain brooks of the present.”

The coals of the Pottsville series in Southern West Virginia are unique. They have characteristics that enable them to hold a place that is separate and distinct from all other classes of bituminous coals. In the process of combustion they are almost entirely free from smoke, and the well-known trade designation, New River Smokeless, has been properly applied. This adds greatly to their value for service in residence districts, on passenger steamers, men-of-war, etc. Where intermittent demands are made upon a motive power the New River Smokeless is unexcelled. It may remain banked for minutes or hours, retaining its fire under a crust of coke, and then be brought to active life by a single motion of the slice bar.

Three seams are mined in the district, but they are so nearly alike in structure, chemical analyses and working results that it is almost impossible to formulate a single distinction that is worthy of note in a practical way. The highest coal in geological order is the Sewell Seam ; the middle number is the Beckley, and the lowest is the Fire Creek.

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## SEWELL SEAM.

Until 1873 the New River Canon was a wilderness, without a habitation for many miles, except at certain crossings, and not even a bridle trail existed along the margins of the stream. Through this wild territory the Chesapeake & Ohio Railway forced its way, and with its advent there came the development of a great mining industry. The late Colonel Joseph. L. Beury, the late John Nuttall, and Captain John A. McGuffin, now the executive head of the Harvey, Dunn Loup and Prudence Companies, were the pioneers in the field, and it was largely through their efforts that the merits of the New River Smokeless Coals were made known to the commercial world.

The Sewell Seam, by reason of its thickness, has naturally received the most attention from operators, and in September, 1904, forty-five mines were shipping from it, with a loading capacity of 24,215 tons per day, or  $66\frac{2}{3}\%$  of the total tonnage of the field.

Dr. I. C. White, in his Coal Report, page 657, says :

“This Sewell bed is a type of the best Pottsville coals in all of the Southwestern region of the State, and, being low in moisture, volatile matter, ash, sulphur and phosphorus, they are necessarily high in fixed carbon, constituting ideal steam and domestic fuels, since they are practically smokeless with proper devices for securing good combustion. They are the only coals in the United States which equal or surpass in effective heating results for steam, domestic and general fuel purposes, the best grades of Cardiff coal from Southern Wales.”

# DIRECTORY

## OF MINES OPERATING IN THE SEWELL SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Lanark . . . . .	New River Smokeless Coal Co. . . . .	Prince, W. Va	New River Consolidated C. & C. Co..	Thurmond, W. Va.
Keeneys Creek .	Nuttallburg C. & C. Co	Nutt'lb'g, "	" " " ..	" "
Nuttall . . . . .	Nuttallburg C. & C. Co	Nutt'lb'g, "	" " " ..	" "
Turkey Knob..	Turkey Knob Coal & Coke Co. . . . .	M'cdon'ld, "	" " " ..	" "
Sun No. 1. . . . .	New River Smokeless Coal Co. . . . .	Sun, "	" " " ..	" "
Sun No. 2. . . . .	New River Smokeless Coal Co. . . . .	Sun, "	" " " ..	" "
Star . . . . .	Star Coal & Coke Co.	Red Star, "	" " " ..	" "
Rothwell . . . . .	Rothwell Coal Co. . . .	Dubree, "	" " " ..	" "
Thurmond. . . . .	Thurmond Coal Co. . .	Concho, "	" " " ..	" "
Brooklyn . . . . .	New River Smokeless Coal Co. . . . .	Finlow, "	" " " ..	" "
Cunard . . . . .	New River Smokeless Coal Co. . . . .	Sewell, "	" " " ..	" "
Cataract . . . . .	Cataract Colliery Co.	Kanawha F'ls	" " " ..	" "
Elmo . . . . .	Isabel C'l & Coke Co.	Elmo, W. Va	C. & O. C. & C. Co..	No. 11 B'way, N. Y.
Sunnyside . . . . .	Isabel C'l & Coke Co.	Sunnyside, "	" " " ..	" " "
Graham . . . . .	McKell C. & C. Co. . .	Glen Jean, "	" " " ..	" " "
Oswald . . . . .	" " " ..	" "	" " " ..	" " "
Kilsythe . . . . .	" " " ..	" "	" " " ..	" " "
Derryhale. . . . .	" " " ..	" "	" " " ..	" " "
Rend . . . . .	Rend Coal Co. . . . .	Rend . . . . .	{ W. P. Rend & Co .	Chicago, Ill.
Kaymoor No. 1.	Lowmoor Iron Co. . . .	Nutt'lb'g, "	C. & O. C. & C. Co..	No. 11 B'way, N. Y.
Kaymoor No. 2.	Lowmoor Iron Co. . . .	Nutt'lb'g, "	" " " ..	" " "
Victoria. . . . .	Victoria C. & C. Co. . .	Caperton, "	" " " ..	" " "
Laura. . . . .	Laura Mining Co . . . .	Red Star, "	" " " ..	" " "
Fayette. . . . .	Fayette C. & C. Co. . .	Fayette, "	C. & O. C. Ag'ncy Co.	No. 1 B'way, N. Y.
Newlyn . . . . .	Manufacturers & Consumers' Coal Co . .	" "	" " " ..	" " "
Michigan . . . . .	Michigan Coal Co . . . .	" "	{ " " " ..	" " "
Blume . . . . .	Blume C'l & Coke Co.	Lookout, "	C. & O. C. Ag'ncy Co.	No. 1 B'way, N. Y.
Smokeless . . . . .	Smokeless Coal Co . .	Winona, "	" " " ..	" " "
Ballinger No. 1.	Ballinger Coal Co . . .	Nuttallburg..	" " " ..	" " "
Ballinger No. 2.	Ballinger Coal Co . . .	Nuttallburg..	" " " ..	" " "
Boone. . . . .	Boone C'l & Coke Co.	Boone. . . . .	" " " ..	" " "
Brown. . . . .	Brown Coal Co. . . . .	Nuttallburg..	" " " ..	" " "
Collins . . . . .	Collins Colliery Co . .	Glen Jean . . .	Smokeless Fuel Co . .	No. 11 B'way, N. Y.
Whipple . . . . .	Whipple Colliery Co.	Glen Jean . . .	Smokeless Fuel Co . .	" " "
DunnLoup No. 1	DunnLoup C. & C. Co.	Dunn Loup..	NewRiver C. Sales Co.	No. 21 State St.,
DunnLoup No. 2	DunnLoup C. & C. Co.	Dunn Loup..	" " " ..	" N. Y.
Harvey . . . . .	Harvey C. & C. Co. . .	Harvey. . . . .	" " " ..	" "
Prudence . . . . .	Prudence Coal Co . . .	Harvey. . . . .	" " " ..	" "
Chapman . . . . .	Chapman C. & C. Co.	Everton . . . .	" " " ..	" "
Sugar Creek . . .	Sugar Cr. C. & C. Co.	Macdonald . .	White Oak Coal Co. . .	Macdonald, W. Va.
Macdonald . . . .	Macdonald Coll'y Co.	Macdonald . .	" " " ..	" "
Oakwood . . . . .	White Oak Fuel Co. . .	Carlisle . . . .	" " " ..	" "
Carlisle . . . . .	" " " ..	Carlisle . . . .	" " " ..	" "
Scarbro No. 1. . .	" " " ..	Scarbro. . . . .	" " " ..	" "
Scarbro No. 2. . .	" " " ..	Scarbro. . . . .	" " " ..	" "
Parral . . . . .	. . . . .	. . . . .	" " " ..	" "
Wingrove. . . . .	. . . . .	. . . . .	" " " ..	" "
Stuart . . . . .	. . . . .	. . . . .	" " " ..	" "



WHARF VIEW OF  
MODELS  
EIFFEL TOWER  
WORLD'S FAIR  
ST. PAUL BARRON & CO.  
PHOTOGRAPHY

STATISTICAL COLUMN  
AT  
WORLD'S FAIR.  
FROM  
KANAWHA FUEL CO.  
CHARLESTON.  
W. VA.



THE  
**KANAWHA COAL FIELDS**  
 OF  
**WEST VIRGINIA**  
 PREPARED FOR  
**THE KANAWHA COAL OPERATORS ASSOCIATION**  
 Compiled by H. R. Campbell. Printed by E. J. Howell.  
 Horizontal Scale 4 inches = 1 mile. Vertical Scale 1 inch = 800 feet.  
**LEGEND**



# ANALYSES SEWELL SEAM.

## LOUP CREEK.

MINE.	AUTHORITY.	MOIST- URE.	VOL. MATTER.	FIXED CARBON.	ASH.	SUL- PHUR.	PHOS- PHORUS	B. T. U.	MEMORANDA.
Sugar Creek.	State Chemist	0.53	19.41	74.08	5.98	0.98	0.005	14.992	
Kilsythe . . . .	"	0.48	22.09	74.28	3.15	0.68	0.002	15.426	
Sun . . . . .	"	0.73	20.67	76.46	2.14	0.59	0.003	15.446	
Turkey Knob	"	0.77	21.29	74.58	3.36	0.77	0.006	15.225	
Prudence . . . .	"	0.67	21.37	74.33	3.63	0.71	0.011	15.095	
Harvey . . . . .	"	0.67	22.91	74.10	2.32	0.61	0.006	15.463	
Star . . . . .	"	0.76	21.18	74.92	3.14	0.69	0.006	15.321	
Collins . . . . .	"	0.76	21.55	71.63	6.06	0.86	0.003	14.891	
Dun Loup . . . .	"	0.54	21.50	74.51	3.45	0.91	0.005	15.419	
Scarbro . . . . .	"	0.64	21.33	72.21	5.82	0.79	0.005	14.804	
Macdonald . . .	"	0.46	21.46	75.12	2.96	0.69	0.005	15.219	
11 Averages	by St. Chem..	0.638	21.342	74.200	3.820	0.753	.....	15.209	
Sun . . . . .	John W. Hill	1.70	15.944	79.944	2.00	0.412	.....	15.393	Av. 4 Tests.
Turkey Knob	"	1.70	17.794	78.344	1.75	0.412	.....	15.391	" 5 "
Star . . . . .	"	1.55	17.273	78.023	2.70	0.454	.....	15.303	" 4 "
Harvey . . . . .	"	1.70	16.598	78.992	2.16	0.316	.....	15.461	" 5 "
Collins . . . . .	"	1.40	16.882	78.981	2.40	0.337	.....	15.507	" 5 "
Av'ge 5 aver	ages, 23 Tests	1.61	16.898	78.857	2.202	0.386	.....	15.411	

## MAIN LINE.

MINE.	AUTHORITY.	MOIST- URE.	VOL. MATTER.	FIXED CARBON.	ASH	SUL- PHUR.	PHOS- PHORUS	B. T. U.	MEMORANDA.
Gaymont . . . .	State Chemist	0.82	26.63	70.87	1.68	0.54	0.023	15.258	
Elmo . . . . .	"	0.75	26.54	70.37	2.34	0.55	0.055	15.348	
Michigan . . . .	"	0.63	25.74	71.21	2.42	0.62	0.005	15.274	
Newlyn . . . . .	"	0.61	25.51	69.46	4.42	0.75	0.005	15.156	
Nuttall . . . . .	"	0.49	25.99	71.49	2.03	0.57	0.005	15.571	
Brown . . . . .	"	0.56	25.52	70.80	3.12	0.63	0.006	15.109	
Keeneys Cr'k	"	1.01	25.53	71.37	2.09	0.73	0.006	15.600	
Chapman . . . .	"	0.67	25.31	70.95	3.07	0.65	0.005	15.130	
Victoria(s.s.)	"	0.61	25.45	72.17	1.77	0.73	0.005	15.439	
" (n.s.)	"	0.73	23.98	73.11	2.18	0.54	0.003	15.573	
Cunard . . . . .	"	0.71	24.12	73.21	1.96	0.51	0.004	15.504	
Brooklyn . . . .	"	1.04	24.85	72.63	1.48	0.62	0.005	15.620	
Kaymoor . . . .	"	0.96	25.14	71.15	2.75	0.56	0.005	14.965	
Rend . . . . .	"	0.89	22.54	74.58	1.99	0.61	0.005	15.517	
Thurmond . . .	"	0.71	24.23	73.34	1.72	0.55	0.006	15.576	
Average 15 Mines . . . .		0.746	25.139	71.781	2.334	0.61	.....	15.376	
Brooklyn . . . .	John W. Hill	0.775	20.852	75.653	2.175	0.595	.....	15.436	Av. 6 Tests.
Gaymont . . . .	"	1.10	23.516	71.816	3.10	0.468	.....	15.025	" 4 "
Fayette . . . . .	"	1.70	20.105	75.454	2.15	0.591	.....	15.340	" 5 "
Thurmond . . . .	"	1.95	20.399	75.999	1.35	0.302	.....	15.514	" 4 "
Av'ge 4 aver	ages, 19 Tests	1.381	21.218	74.730	2.194	0.489	.....	15.329	



ANALYSES SEWELL SEAM (Continued).  
KEENEYS CREEK.

MINE.	AUTHORITY.	MOIST- TURE.	VOL. MATTER.	FIXED CARBON.	ASH.	SUL- PHUR.	PHOS- PHORUS	B. T. U.	MEMORANDA.
Boone. . . . .	State Chemist	0.70	26.17	70.49	2.64	0.68	0.017	15.443	
Rothwell. . . .	"	0.75	24.39	70.88	3.98	0.73	0.005	15.048	
Rothwell. . . .	"	0.74	28.58	66.36	4.32	0.98	0.018	14.893	
Ballinger No 1	"	0.50	24.61	67.49	7.40	0.79	0.015	14.281	
Smokeless. . .	"	0.74	27.09	70.58	1.59	0.53	0.005	15.359	
Blume. . . . .	"	0.87	26.91	69.78	2.44	0.85	0.004	15.203	
Average, 6 Mines . . . .		0.717	26.292	69.263	3.728	0.76	.....	15.038	
Ballinger. . . .	John W. Hill	1.35	21.810	73.660	2.70	0.48	.....	15.373	Av. 5 Tests.
Boone. . . . .	"	1.60	20.320	75.870	1.75	0.46	.....	15.440	" 6 "
Rothwell. . . .	"	1.75	21.712	73.711	2.25	0.577	.....	15.367	" 5 "
Av'ge 3 averages, 16 Tests		1.57	21.281	74.414	2.233	0.506	.....	15.393	
<b>General Average, 44 Tests. .</b>		0.927	22.791	73.295	2.861	0.623	.....	15.289	

COKE.

SEWELL SEAM.

OVENS.	AUTHORITY.	MOIST- TURE.	VOL. MATTER.	FIXED CARBON.	ASH.	SUL- PHUR.	PHOS- PHORUS	MEMORANDA.
Victoria. . . . .	State Chemist	0.05	0.84	93.94	5.17	0.68	0.010	..72 Hours.
Stone Cliff. . .	"	0.11	1.17	89.87	8.85	0.63	0.013	..72 "
Rend. . . . .		0.08	0.73	92.89	6.30	0.66	0.014	..72 "
Brooklyn. . . .		0.10	1.27	91.89	6.74	0.60	0.008	..72 "
Kaymoor. . . .		0.07	1.18	88.60	10.15	0.54	0.012	..72 "
Chapman. . . .		0.13	0.92	92.09	6.86	0.56	0.007	..48 "
Fayette. . . .		0.52	2.83	87.73	8.92	0.83	0.013	..72 "
Harvey. . . .		0.12	0.59	91.82	7.47	0.76	0.011	..48 "
Collins. . . .		0.07	0.78	90.37	8.78	1.02	0.005	..48 "
Turkey Knob. .		0.06	0.81	91.33	7.80	0.81	0.009	..72 "
Macdonald. . .		0.11	0.68	92.71	6.50	0.80	0.006	..72 "
Sun. . . . .		0.16	0.93	92.03	6.88	1.06	0.006	..72 "
Average, 12 Plants. . . .		0.14	1.06	91.26	7.54	0.75	0.0095	.....

BECKLEY SEAM.

For many years this seam has been mined in the vicinity of Beckley C. H., Raleigh County, for local supplies, under the general impression that it was the Fire Creek Seam ; but when Mr. Marius R. Campbell, of the U. S. Geological Survey, made a study of the field he discovered and clearly demonstrated the fact that it is a distinct bed. Mr. Campbell named the seam after the town of Beckley, but it is to be regretted that it does not bear the name of the eminent discoverer of its identity.

As far as can be determined from the evidence at hand, the principal deposit of the Beckley will be found underlying the plateau that is drained by Piney Creek. The Chesapeake & Ohio Railway has built an extension up Piney to open the field, and a marked increase in tonnage may be expected from the district in the next few years. At the present time the mines so recently started have a capacity rating of 2,595 tons per day.

#### ANALYSIS.

MOIS.	VOL. MAT.	FIXED CARB.	ASH.	SULPH.	B. T. U.
0.58	18.04	78.95	2.43	0.77	15.534

## DIRECTORY

### OF MINES OPERATING IN THE BECKLEY SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Piney No. 1....	Piney Colliery Co ...	Stonewall, W. Va	New River Consoli- dated C. & C. Co..	Thurmond, W. Va.
Piney No. 2....	" " ...	" "	" " ..	" "
Piney No. 3....	" " ...	" "	" " ..	" "
Lanark.....	New River Smokeless Coal Co.....	Lanark, "	" " ..	" "
Mabscott .....	.....	.....	C. & O. C. Ag'ncy Co.	} No. 1 Broadway, N. Y., and Kanawha C. & C. Co., Cincinnati.
Raleigh.....	Raleigh C. & C. Co..	Beckley.....	" " " ..	
Stonewall .....	Stonewall C. & C. Co.	Stonewall....	" " " ..	
Beckley .....	Beckley C. & C. Co..	Beckley .....	.....	

## FIRE CREEK SEAM.

For a little more than thirty years the Fire Creek Coal has held a place as one of the fuel standards of the world. It has been shipped to Maine and to Canada ; blacksmiths have made their welds with it in Arizona ; it has gone to the interior of Mexico, and to the Dakotas and Montana in the Northwest. Only a coal of tried excellence could bear the cost of transportation to such distant markets. The table of analyses will clearly illustrate the high percentage of combustible material carried by the coals from the Fire Creek Seam.

**Every analysis submitted in this pamphlet has been made from samples that were stripped from top to bottom of the seam.**

# DIRECTORY

## OF MINES OPERATING IN THE FIRE CREEK SEAM.

MINE.	COMPANY OPERATING.	POST OFFICE.	SALES AGENTS.	ADDRESS.
Glendale. . . . .	Glendale Coal Co. . . . .	Quinnimont, W.Va.	New River Consoli- dated C. & C. Co. . .	Thurmond, W.Va.
Export . . . . .	Export Coal Co. . . . .	" "	" "	" "
Hemlock Holl'w	Hemlock Hol'wC.Co.	" "	" "	" "
Greenwood . . . .	Greenwood Coal Co..	Lawton, "	" "	" "
Quinnimont. . . .	Quinnimont Coal Co.	Lawton, "	" "	" "
Laurel Creek. . .	Laurel Creek Coal Co.	Quinnimont .	" "	" "
Robins . . . . .	Robins Coal Co . . . . .	Quinnimont .	" "	" "
Wright No. 1..	Wright C. & C. Co..	Wright . . . . .	" "	" "
Wright No. 2..	Wright C. & C. Co..	Wright . . . . .	" "	" "
Royal . . . . .	New River Smokeless Coal Co. . . . .	Prince, W.Va	" "	" "
Alaska . . . . .	Alaska C. & C. Co . .	Clarem't, "	" "	" "
Beechwood No.1	Beechwood C.&C. Co.	" "	" "	" "
Beechwood No.2	Beechwood C.&C. Co.	" "	" "	" "
Fire Creek . . . .	Fire Creek C.&C. Co.	Fire Cr., "	" "	" "
Erskine . . . . .	Thurmond Coal Co..	Concho, "	" "	" "
Rush Run. . . . .	New River Smokeless Coal Co. . . . .	RushRun, "	" "	" "
Red Ash. . . . .	New River Smokeless Coal Co. . . . .	Red Ash, "	" "	" "
Ridgeview . . . .	Ridgeview Coal Co. . .	Thayer, "	C. & O. C. Ag'ncy Co.	No. 1 B'way, N. Y.
Ephraim Creek.	Ephraim Cr.C.&C.Co	Thayer, "	" " " "	" "
Stone Cliff. . . .	Beury C. & C. Co. . . .	StoneCliff "	" " " "	" "
Big Bend. . . . .	Isabel C. & C. Co. . . .	Dimmock, "	C. & O. C. & C. Co..	No. 11 B'way, N. Y.
Echo . . . . .	Echo C. & C. Co. . . . .	Beury, "	C. & O. C. & C. Co..	" "
Central. . . . .	Gordon C. & C. Co..	Fire Creek . .	{ Kanawha Fuel Co. New River Coal Sales Co. . . . .	Charleston, W.Va.
Rend. . . . .	Rend Coal Co. . . . .	Rend, W. Va.	{ C. & O. C. & C. Co. W. P. Rend & Co.	No. 11 B'way, N. Y. Chicago, Ill.

Total loading capacity, 8,525 tons per day.

## ANALYSES FIRE CREEK SEAM.

### FIRE CREEK SEAM.—COAL.

MINE.	AUTHORITY.	MOIST- URE.	VOL. MATTER.	FIXED CARBON.	ASH.	SUL- PHUR.	PHOS- PHORUS	B. T. U.
Alaska . . . . .	John W. Hill.	1.30	15.995	78.745	3.55	0.410	.....	15.182
Ridgeview. . . .	"	1.40	16.271	77.921	4.05	0.358	.....	15.220
Beechwood . . . .	"	1.65	16.548	78.097	2.30	0.405	.....	15.482
Stone Cliff. . . .	"	1.30	17.670	78.170	2.40	0.460	.....	15.475
Rush Run. . . . .	"	1.55	15.715	78,815	3.15	0.770	.....	15.265
Echo . . . . .	"	1.70	15.564	78.812	3.45	0.474	.....	14.989
Central . . . . .	"	1.80	15.902	78.300	3.40	0.598	.....	15.211
Fire Creek . . . .	"	1.70	16.498	79.398	2.10	0.316	.....	15.541
Royal . . . . .	"	1.70	14.908	78.652	4.25	0.495	.....	15.088
Quinnimont . . . .	"	1.50	16.517	76.217	5.10	0.666	.....	15.020
Greenwood. . . .	"	1.80	15.982	78.382	3.30	0.538	.....	15.298
Average, 11 Mines . . .		1.582	16.143	78.319	3.368	0.499		15.252

## ANALYSES FIRE CREEK SEAM (Continued).

### FIRE CREEK SEAM.—COAL.

MINE.	AUTHORITY.	MOIST- URE.	VOL. MATTER.	FIXED CARBON.	ASH.	SUL- PHUR.	PHOS- PHORUS	B. T. U.	MEMORANDA.
Ridgeview ..	State Chemist	0.59	17.88	78.57	2.96	0.52	0.010	15.334	
Ephraims ...	"	0.44	21.43	74.21	3.92	0.55	0.033	15.147	
Alaska .....	"	0.38	20.71	72.21	6.70	0.48	0.020	14.964	
Beechwood ..	"	0.82	20.08	74.65	4.45	0.63	0.056	15.125	
Stone Cliff...	"	0.44	20.73	77.20	1.63	0.77	0.003	15.476	
Rend .....	"	0.61	19.72	75.37	4.30	0.60	0.006	15.208	
Echo .....	"	0.57	20.95	72.36	6.12	0.95	0.130	14.758	
Central .....	"	0.51	20.27	76.67	2.55	0.58	0.007	15.500	
Fire Creek ..	"	0.82	20.55	74.11	4.52	0.55	0.024	15.098	
Thurmond ..	"	0.57	21.35	74.31	3.77	0.91	0.007	15.327	
Big Bend ....	"	0.70	21.64	76.46	1.20	0.64	0.002	15.504	
Wright .....	"	0.56	18.36	75.73	5.35	0.59	0.063	15.182	
Royal .....	"	0.62	18.57	78.36	2.45	0.62	0.014	15.438	
Robins .....	"	0.75	19.16	75.63	4.46	0.63	0.008	15.101	
Laurel Creek.	"	0.62	18.03	76.59	4.76	0.71	0.019	15.080	
Quinnimont .	"	0.83	19.26	70.95	8.96	0.96	0.152	14.833	
Greenwood ..	"	0.69	19.29	75.42	4.60	0.77	0.046	15.455	
Average, 17 Mines....		0.60	19.93	75.20	4.27	0.67	0.035	15.208	

### FIRE CREEK SEAM.—COKE.

Greenwood ..	State Chemist	0.15	0.96	93.21	5.68	0.60	0.075	.....	..72 Hours.
Quinnimont .	"	0.11	0.67	90.68	8.54	0.86	0.099	.....	..72 "
Beechwood ..	"	0.04	1.34	92.30	6.32	0.45	0.0675	.....	..72 "
Stone Cliff...	"	0.29	1.02	92.19	6.50	0.76	0.009	.....	..72 "
Fire Creek ..	"	0.07	0.92	90.17	8.84	0.54	0.063	.....	..72 "
Average, 5 Plants ....		0.13	0.98	91.71	7.18	0.64	0.0627	.....	

## TRANSPORTATION FACILITIES.

The mines in the New River and Kanawha districts which have been referred to in this paper are all located on the line of the Chesapeake & Ohio Railway. Quite a large number in the Kanawha District, in addition to their railroad connections, have loading tipples on the Great Kanawha River.

### THE CHESAPEAKE & OHIO R. R.

#### OFFICIALS.

GEORGE W. STEVENS, *President*, Richmond, Va.

DECATUR AXTELL, *Vice-President*, Richmond, Va.

C. E. DOYLE, *General Manager*, Richmond, Va.

F. M. WHITTAKER, *Freight Traffic Manager*, Richmond, Va.

A. G. TROUP, *Assistant Freight Traffic Manager*, New York.

E. D. HOTCHKISS, *General Freight Agent*, Richmond, Va.

W. F. HITE, *Assistant General Freight Agent*, Huntington, W. Va.

The Chesapeake & Ohio is essentially a coal road ; 52<sup>89</sup>/<sub>100</sub>% of the entire freight movement over its 1,641 miles of track during the year ending June 30, 1904, was represented by the coal and coke production originating on the line. Extensive piers have been erected at Newport News for loading coal destined to coast and foreign ports. Connections are made at Richmond, Charlottesville, Basic and Lynchburg for the Eastern and Southern States; at Gauley Junction for the interior of Ohio, Toledo and Detroit ; at Ashland for points reached by the Detroit Southern ; and from the company's terminals at Louisville and Cincinnati shipments are made to the West over all of the roads entering those cities.

The commodity from which a trunk line derives its principal revenue naturally receives the greatest consideration from the management; and if consumers and dealers in distant States are interested in the coals and cokes of the Kanawha and New River districts they are assured of an active interest on the part of the railway company in undertaking a suitable adjustment of freight rates. The home consumption amounts to a very small percentage of the annual output, and special care is therefore given to business originating beyond the boundaries of West Virginia.

For a better understanding of the extent of the mining industry on the line of the Chesapeake & Ohio Railway, and the number of seams that are worked, the following table is inserted. Once a month there is a joint meeting of the district railway officials and a committee representing the operators, and they determine the daily loading capacity of every mine. The figures given are therefore the official allotments for car distributions in September, 1904. The seams are listed in their geological sequence, commencing with the highest in the formations :

Mines shipping	No. 5 Block	Seam	775	tons per day.
"	Belmont	"	2,075	" "
"	Coalburgh	"	4,575	" "
"	Winifrede	"	4,350	" "
"	Cedar Grove	"	100	" "
"	*No. 2 Gas	"	17,755	" "
"	Powellton	"	400	" "
"	Peerless	"	200	" "
"	No. 1 Eagle	"	1,950	" "
"	Sewell (Smokeless)	"	24,215	" "
"	Beckley	"	2,595	" "
"	Fire Creek	"	8,525	" "
Total.			67,515	" "

Coke not included.

\*Includes Gauley Mountain Coal Co., delivering No. 2 Gas on the New River Division.

# KANAWHA RIVER.

Including the appropriations for the current year, the United States Government has expended \$4,808,200 in the construction and maintenance of a series of locks and dams on the Kanawha River from the head of navigation at Deepwater to its junction with the Ohio River at Point Pleasant, W. Va. By reason of these improvements the Kanawha operators can load barges at all seasons of the year and move them to the mouth of the river, where it enters the Ohio, 282 miles below Pittsburgh. This business will eventually lead to the organization of towage lines for the through transportation of coals from both the New River and Kanawha fields to the Panama Canal, via the Kanawha, Ohio and Mississippi Rivers. The river outlet is used to a considerable extent as an overflow for surplus grades. It increases regularity of work for the mines having river tipples, and enables the operators to maintain a standard of production for the prompt filling of railroad orders, which always have the preference.

## KANAWHA RIVER TONNAGE.

CALENDAR YEAR.	TONS	CALENDAR YEAR.	TONS.
1897 .....	650,680	1901 .....	1,370,180
1898 .....	1,089,160	1902.....	937,880
1899.....	942,800	1903.....	1,350,000
1900....	1,246,680		

The State of West Virginia is increasing rapidly in coal production, and now holds third place in America. The following figures, compiled by E. W. Parker, Esq., Statistician of the United States Geological Survey, show the output of the twelve leading States for the year 1903 :

STATE.	TONS OF 2,000 LBS.	STATE.	TONS OF 2,000 LBS.
Pennsylvania.....	103,271,057	Colorado.....	7,639,268
Illinois.....	37,206,667	Kentucky.....	7,431,016
WEST VIRGINIA.....	<b>30,250,408</b>	Iowa.....	6,852,686
Ohio.....	25,004,893	Kansas.....	5,867,208
Alabama.....	11,832,124	Tennessee.....	4,797,346
Indiana.....	10,905,842	Maryland.....	4,783,083

A little more than 30% of the tonnage of the State of West Virginia is produced from the counties traversed by the Chesapeake & Ohio Railway. This is a creditable showing, and speaks well in itself for the merits of the New River and Kanawha fields, for only coals that have excellent burning qualities will please discriminating consumers, and only coals that can be placed on board cars at the minimum mining cost are able to hold a commanding position in the face of the intense competition from the mines within the States through which these coals must be transported to reach their markets.

## RELIEF MAPS.

Two of the most perfect relief maps exhibited at the Louisiana Purchase Exposition were those representing the New River and Kanawha Coal Districts of West Virginia, and each had the honor of winning a gold medal.

They were constructed by Mr. Edwin E. Howell, of Washington, D. C., the cost, amounting to \$5,000, being contributed by individual subscriptions from the operators. At the close of the Exposition they will be given a permanent place in the new National Museum.

The geology of the two districts, and the outcrop lines of the various coal seams, are shown with great accuracy. This data was prepared under the supervision of Marius R. Campbell, Esq., of the United States Geological Survey, who devoted many weeks to this work. Too much credit cannot be given Mr. Campbell for his valuable contribution to these permanent records of the Geology of the Kanawha and New River Coal Fields.

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## STATISTICAL COLUMN.

In order to illustrate in a graphic form the production of bituminous coal in the United States from the beginning of the industry to the present time, Mr. E. W. Parker, of the United States Geological Survey, prepared the plans for a column consisting of nine cubes of coal, each cube representing the bulk of the production for a ten-years' period on a scale of one one-thousandth. The production for the ten years ending December 31st, 1903, being equal to a solid mass of coal 4750 ft. wide, 4750 ft. deep, and 4750 ft. high, the base cube in the column was cut 4 ft. 9 in. square; and this rule was followed for nine periods of ten years each. The total height of the column amounted to 18 ft. 2 in. Attached to it are four models representing the Eiffel Tower, Washington Monument, Park Row Building of New York, and the Palace of Mines and Metallurgy at the Louisiana Purchase Exposition. These models are on the same scale of one one-thousandth, and show in a very striking way, comparatively, the immensity of the coal production in the United States.

The display was suggested by Mr. Parker as having an educational value for the visitors to the World's Fair, and the Kanawha Fuel Co., of Charleston, W. Va., undertook the work of construction and installation as a contribution to this cause.

Orders were given by the Kanawha Fuel Co. to have the cubes cut from the following splint or semi-cannel seams, viz.: No. 5 Block, Belmont, Coalburgh, and Winifrede. Great care was taken by the mines to preserve exact dimensions, but, unfortunately, the car in which the cubes were shipped was caught in a wreck, and they arrived in St. Louis broken into fragments. The time was too short to permit of a duplication of the work, and the column was constructed to approximate dimensions by cementing the broken cubes. But for the accident referred to, the beautiful structure of the Kanawha Splint Seams would have been shown in a very perfect manner.

NEIL ROBINSON,  
CHARLESTON, W. VA.

*November, 1904.*

# SALES AGENCIES.

(AGENCIES HAVING THE EXCLUSIVE CONTROL OF THE PRODUCTION FROM ONE OR MORE OF THE MINES LISTED IN THIS PAMPHLET.)

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## NEW RIVER CONSOLIDATED COAL & COKE CO.

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New York, Whitehall Building.

## WARREN & MONKS CO.

Boston, Mass., 19 Congress Street. New York, Whitehall Building.  
Newport News, Va., Schmelz Building.

## KANAWHA COAL & COKE CO.

Cincinnati, O., 4th and Elm Streets.

## SMOKELESS FUEL CO.

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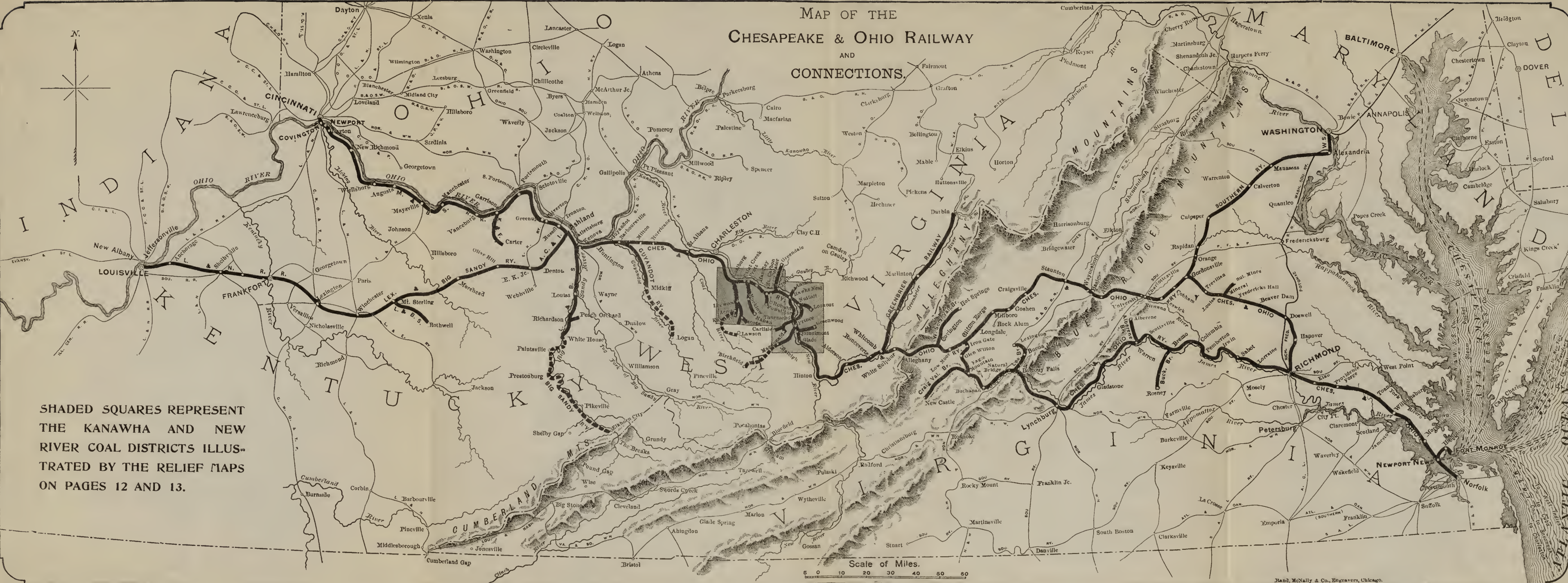
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# MAP OF THE CHESAPEAKE & OHIO RAILWAY AND CONNECTIONS.



SHADED SQUARES REPRESENT  
THE KANAWHA AND NEW  
RIVER COAL DISTRICTS ILLUSTRATED  
BY THE RELIEF MAPS  
ON PAGES 12 AND 13.

Scale of Miles.  
0 10 20 30 40 50 60





