COMMONWEALTH OF PENNSYLVANIA

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COAL RESERVES IN CAMBRIA COUNTY, PENNSYLVANIA

By

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Introduction.

In connection with the "Introduction to the Bituminous Coal Fields of Pennsylvania" now being prepared for publication by the Pennsylvania Geological Survey, coal reserves of the bituminous fields are being computed by Mr. John F. Reese. In order to render this information available at once without waiting for the uncertain date of printing the report, an abstract of Mr. Reese's figures for Cambria County is given herewith. All of the information readily available at this time has been used in the computation, which followed the methods used by the Land Classification Board of the United States Geological Survey in its valuation of the public coal lands. The results are given by beds for each township. For some beds and for some areas the data are abundant and the results entirely reliable. For other beds and areas the data are meager and the results subject to revision as additional data are obtained. All the data used and the computation sheets are permanently filed so that modifications of the original figures can be made readily when required by additional information.

The figures presented are preliminary and subject to correction for any area when that area shall be studied in detail. In the meantime critical examination of the figures is invited in order that the results may be made as accurate as possible. To that end the Survey will welcome every bit of information not now in its possession. Records of drillings and other data will be kept strictly confidential if so desired, although the Bureau naturally prefers to be able to use data freely.

George H. Ashley.

Coal Beds.

Cambria County has six coal beds that are now of economic interest. In order of present importance as shipping coals they are the Lower Kittanning, Upper Kittanning, Lower Freeport, Upper Freeport, Clarion, and Brookville.

Lower Kittanning Coal. The many mines on this bed and exposures of its outcrop have furnished many measurements of its thickness, thus making possible an accurate and reliable computation of the quantity of coal. The "B-Rider" coal of the Bens Creek area has been computed with the Lower Kittanning coal in this report.

The Lower Kittanning is the most persistent bed, contains the greatest coal reserve, and is the largest producer within the county, yielding more than 8,100,000 tons annually.

Upper Kittanning coal. A fair amount of information as to the thickness and persistency of this bed is available.

The bed is best suited for mining in the Patton, Portage, South Fork, and Johnstown areas.

The Upper Kittanning bed is fourth in size of reserve within the county, and ranks second in production, with a total of over 3,600,000 tons annually.

Lower Freeport coal. A fairly accurate estimate of the quantity of coal in this bed is made possible by many measurements at mines and outcrop.

It attains its best development for mining in the Barnesboro-Spangler area.

The Lower Freeport bed contains the second greatest reserve within the county, and ranks third in production with a total of over 3,300,000 tons annually.

Upper Freeport coal. The extensive outcrop of this bed throughout the county, and its mine development in various localities, furnish a fair number of measurements for an accurate estimate of quantity.

It is mined most extensively in the Barnesboro, Hastings, Gallitzin, and Cresson areas where it attains its best thickness for mining.

The Upper Freeport coal is third in size of reserve in the county, and ranks fourth in production with a total of over 2,700,000 tons annually.

Clarion or A' coal. This coal has been computed as of economic interest in Reade and Richland townships where it has been mined. Little is known of its thickness and extent, and only areas surrounding mining development or proven ground have been computed.

The Clarion coal as computed is sixth in size of reserve within the county, and ranks fifth in production with a total of over 90,000 tons annually.

Brookville or A coal. This bed has been considered as of interest in five townships, namely, Adams, Cresson, Dean, Gallitzin, and Richland.

Only areas surrounding operations or proven ground have been computed, as little is known of the extent and persistency of this coal.

As computed here, the Brookville coal is fifth in size of reserve within the county, and ranks sixth in production with a total of over 18,000 tons annually.

Method of Computing Reserves.

A base map for each coal bed was made by tracing its outcrop from the quadrangle maps made by the U. S. Geological Survey. All available measurements of a coal bed, gathered from Federal and State reports, mine maps, core drill records and personal inspections, were plotted on the map of that coal bed at the locality represented. By studying the distribution of the figures, areas of equal thickness were plotted, and by means of a planimeter, an instrument for measuring plane areas, the area of each coal bed in each township was measured. The unit used for calculating the quantity of coal was 90,000 short tons per inch of bed per square mile of area.

Worked-out areas were determined from mine maps and plotted to scale on the base maps. The same method as above was used for computing the quantity of coal extracted.

For some localities, no information is available as to the mined out areas of the various beds computed herein. For these places, an estimate of probable depletion has been made, based on age and size of operation, or on the difference between original areas and statements of acreages remaining unmined.

Having calculated the quantity of coal originally contained within the area of any bed and subtracted the quantity already mined out, the writer determined from engineering experience the probable percentage of each bed which could be recovered in different localities. This varies from 80 to 90 per cent, depending on the thickness and character of the bed. The quantity of coal computed to be in any bed, multiplied by the assumed percentage of recovery, less 15 per cent for loss in mining, gives the estimated recoverable tonnage.

Coal Reserves.

The total area of Cambria County is 697.4 square miles.

The result of computing the coal reserves in Cambria County based on the latest maps, engineering data, and methods is shown in the accompanying tables.

One table gives the estimated recoverable tonnage by beds and townships. The figures have been given as computed. It should however be distinctly understood that while the acreage of each of the beds has been accurately computed, the reliability of the average thickness of the coals used in the computation of tonnage decreases for the beds in the order following: Lower Kittanning, Upper Freeport, Lower Freeport, Upper Kittanning, Brookville, and Clarion. Thus, while the figures for the Lower Kittanning bed are conservative and probably reliable, the figures for the Clarion coal may be much too small or many times too large.

Detailed tables of the coal reserves in each township have been prepared and will appear in printed form in the report now being written on the bituminous coal fields of the State. They can be consulted in the office of the Survey; or figures for a single township will be sent on request.

Coal Reserves in Cambria County, in short tons.

Bed	Original Deposit	Mined Out	Recoverable
Upper Freeport	1,016,000,000	74,050,000	711,920,000
Lower Freeport	1,337,800,000	85,200,000	900,730,000
Upper Kittanning	922,500,000	89,700,000	612,430,000
Lower Kittanning	2,010,300,000	216,800,000	1,348,100,000
Clarion	32,400,000	1,000,000	21,300,000
Brookville	64,000,000	150,000	43,600,000
Total	5,383,000,000	466,900,000	3,638,080,000

Summary of Recoverable Coal in Cambria County, in short tons

Township	U. Freeport	L. Freeport	U. Kittanng	L. Kittanng	Clarion	Brookville	Total
Adams	29,000,000	26,500,000	83,200,000	76,800,000	----	4,300,000	219,800,000
Allegheny	57,600,000	65,600,000	5,500,000	64,500,000	----	----	193,200,000
Barr	5,600,000	73,600,000	16,400,000	67,500,000	----	----	163,100,000
Blacklick	14,000,000	72,100,000	37,400,000	73,200,000	----	----	196,700,000
Cambria	50,000,000	116,600,000	----	138,000,000	----	----	304,600,000
Chest	6,500,000	45,500,000	63,000,000	47,400,000	----	----	162,400,000
Clearfield	21,600,000	57,500,000	29,000,000	54,300,000	----	----	162,400,000
Conemaugh	12,800,000	11,300,000	7,500,000	10,500,000	----	----	42,100,000
Cresson	24,200,000	14,500,000	17,600,000	32,000,000	----	10,800,000	99,100,000
Croyle	47,600,000	31,300,000	35,500,000	45,100,000	----	----	159,500,000
Dean	14,000,000	11,200,000	21,800,000	46,800,000	----	11,000,000	104,800,000
E. Carroll	9,200,000	64,600,000	16,600,000	56,400,000	----	----	146,800,000
East Taylor	18,300,000	12,600,000	8,500,000	20,400,000	----	----	59,800,000
Elder	7,000,000	14,100,000	16,100,000	22,500,000	----	----	59,700,000
Gallitzin	30,300,000	9,200,000	10,000,000	36,200,000	----	11,000,000	96,700,000
Jackson	32,800,000	48,300,000	25,700,000	81,200,000	----	----	188,000,000
Johnstown City	120,000	130,000	230,000	2,700,000	----	----	3,180,000
Lower Yoder	8,800,000	5,600,000	6,600,000	15,100,000	----	----	36,100,000
Middle Taylor	16,500,000	7,600,000	8,800,000	15,700,000	----	----	48,600,000
Munster	44,400,000	21,700,000	----	40,100,000	----	----	106,200,000
Portage	24,000,000	13,000,000	12,200,000	19,500,000	----	----	68,700,000
Reade	26,200,000	15,000,000	21,200,000	77,200,000	10,500,000	----	150,100,000
Richland	19,000,000	21,000,000	53,100,000	48,200,000	10,800,000	6,500,000	158,600,000
Stony Creek	5,200,000	4,000,000	6,000,000	14,000,000	----	----	29,200,000
Summerhill	60,700,000	31,500,000	33,000,000	62,300,000	----	----	187,500,000
Susquehanna	56,200,000	41,500,000	17,000,000	54,200,000	----	----	168,900,000
Upper Yoder	23,000,000	14,500,000	11,700,000	36,000,000	----	----	85,200,000
Washington	18,800,000	10,800,000	9,100,000	19,000,000	----	----	57,700,000
West Carroll	----	8,800,000	3,000,000	16,100,000	----	----	27,900,000
West Taylor	1,300,000	1,100,000	1,200,000	4,400,000	----	----	8,000,000
White	27,200,000	30,000,000	35,500,000	50,800,000	----	----	145,500,000
Total	711,920,000	900,730,000	612,430,000	1,348,100,000	21,300,000	43,600,000	3,638,080,000