STRIP MINING IN PENNSYLVANIA

FIRST REPORT

of the

COMMITTEE ON STRIP MINING

of the

JOINT STATE GOVERNMENT COMMISSION

To the

GENERAL ASSEMBLY OF THE

COMMONWEALTH OF PENNSYLVANIA

APRIL 20, 1945

JOINT STATE GOVERNMENT
COMMISSION
CAPITOL BUILDING
HARRISBURG, PA.

JOINT STATE GOVERNMENT COMMISSION

OF

THE GENERAL ASSEMBLY

(Created in 1937, P. L. 2640, as last amended 1943, P. L. 13)

"A continuing agency of the General Assembly to undertake studies and develop facts, information and data on all phases of government for the use of the General Assembly and Departments and Agencies of the State Government."

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LETTER OF TRANSMITTAL

To the General Assembly of Pennsylvania:

Under authority of the Act of July 1, 1937, P. L. 2460 (act creating Joint State Government Commission) as last amended by the Act of March 8, 1943, P. L. 13, and pursuant to action of the Joint State Government Commission, I have the honor to submit the report of the Committee on Strip Mining of the Joint State Government Commission.

IRA T. FISS, *Chairman,*
Joint State Government Commission.

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FOREWORD

The regulation of strip mining has been a subject of much discussion in Pennsylvania. Legislation was enacted in 1941 providing for the inspection and regulation of such operations by the Department of Mines to protect the health and safety of persons employed in strip mining, and requiring certain information and reports. Otherwise there is no statute which regulates stripping operations as they may affect the industry, the topography, or the general welfare of the public.

Strip Mining is also referred to as open-pit mining and is a procedure used to extract coal by removing the overburden with the use of mechanical equipment. Although this method has been in operation for many years, it was not developed to a large scale until recent years. The demand, therefore, arose for some regulation because of the complaints that such mining produced health and safety hazards, unsightly spoil banks, reduced land values for taxation or other purposes and destroyed farm lands.

As a result, Senate Bill No. 498 was passed by both houses of the General Assembly in 1943 to create a commission to make a study and investigation of strip mining in the Commonwealth, but the Governor vetoed the measure, stating that the "Joint State Government Commission and the Department of Mines both have ample authority to make the survey, investigation and recommendations."

Accordingly, on June 16, 1943, the Joint State Government Commission on its own motion, accepted the recommendation of its Executive Committee that a committee be appointed to study strip mining. The committee was appointed and held its organization meeting on July 21, 1943.

In order to obtain first-hand information of the scope of strip mining and the methods employed, the committee decided it was necessary to visit such operations in various sections of the Commonwealth. The committee viewed stripping operations in seven counties of the bituminous region and in six counties of the anthracite region. Without

this information, the committee would have been seriously handicapped in discharging its duties.

The inspection trip into the bituminous field included viewing both active and inactive coal stripping operations. The places visited included the operations of Irwin Gas and Coal Company, in the Slickville section of Westmoreland County, and operations of the Russell Stripping, near Champion, of the Pittsburgh Coal Company; the Florence Mine near Burgettstown of the Harmon Creek Coal Corporation, and the Sunny Hill operation in Washington County, as well as operations in Allegheny, Indiana, Armstrong, Jefferson and Butler counties. The committee viewed reforestation projects consisting of planting of pines on old spoil banks, the natural growth of mixed shrubbery and sparse tree growth on abandoned operations. Some of the growth showed progress, while in other places a rather desolate, unsightly and discouraging condition prevailed.

The trip in the anthracite coal field included inspection of the operations of the Philadelphia and Reading Coal and Iron Company at the Beechwood Stripping in Schuylkill County, Locust Summit Breaker in Northumberland County as well as operations in Ashland, Girardville, Mahanoy Plains, Turkey Run Stripping south of Shenandoah, and the Indian Ridge Stripping near the borough of Shenandoah in Schuylkill County, and at Lansford in Carbon County, the Lehigh Navigation Coal Company's operation at Summit Hill, Carbon County, Franklin Colliery in Wilkes-Barre, and the Baltimore operation of the Hudson Coal Company, both in Luzerne County. A number of operations were also observed in Columbia and Lackawanna Counties. The visits included both active and inactive operations.

It was obvious to the committee that the operations in the two fields differed considerably due to the fact that the veins are much thicker and generally at sloping angles in the anthracite field whereas the bituminous veins run more nearly horizontal and are more or less parallel with and closer to the surface. The depth and extent of some of the operations in the anthracite field was pointed out rather forcibly to the committee when it observed the Summit Hill operation in Carbon County which had a depth of 400 feet. Some abandoned stripping operations observed by the committee are more than 25 years old. The

first stripping on Summit Hill is believed to have been undertaken as early as 1821.

At subsequent meetings, the committee conferred with representatives of county commissioners, State Association of Township Supervisors, United Mine Workers, coal operators, and representatives of the State Departments of Internal Affairs, Forests and Waters, Mines, Commerce, Health, and Agriculture, the Game, Fish, and Post-War Planning Commissions, and the Sanitary Water Board. Invitations to attend these meetings were sent to every agency or organization which it was thought might have an interest in the subject of strip mining, including all associations of local government units. Some replies indicated lack of interest, but all interested parties were afforded an opportunity to be heard.

Upon completion of the visits, hearings and meetings the chairman of the committee appointed three subcommittees from the committee membership to study problems peculiar to the three coal fields of Pennsylvania, namely, the anthracite, central bituminous, and western bituminous fields.

Following receipt, on July 27, 1944, of the reports of the three subcommittees, the committee on December 15, 1944 adopted proposals which were submitted to the Commission as recommendations for legislative action.

In its deliberations, the committee gave consideration to the question of conserving the resources of the Commonwealth and protecting the general welfare of the people. At the same time, the committee was mindful of the importance of coal production to the war effort and the type of legislation which could be administered effectively.

The proposals set forth herein represent the findings of the committee after much study, deliberation and discussion of the subject. It believes the recommendations represent a practical, reasonable, and impartial solution of the problem.

It should be pointed out that the committee did not obtain or develop the actual figures on the effect of stripping on present and future land values and taxes. It did not verify the data and figures submitted by the various organizations and individuals on wages, in-

come, losses, costs of operation and refilling. However, the committee did have before it official production figures and other data to aid it in reaching its conclusions.

Senate Bill No. 265 incorporates the recommendations of the committee and, as they pertain to bituminous coal operations, have in the main been included in Senate Bill No. 183.

The statistics and data contained in Chapter I entitled, "Some Pertinent Facts on the Coal Mining Industry and a Brief History of Strip Mining" and in the tables at the end of the report are from official sources, while the information and data in Chapter II entitled "A Summary Review of Statements and Suggestions or Recommendations on Strip Mining Made to the Committee by Operators, Organizations and Governmental Officials" were obtained from the individuals appearing before the committee.

The committee desires to acknowledge, with sincere appreciation, the co-operation and assistance given by the Honorable Richard Maize, Secretary of Mines, Honorable Joseph J. Walsh, Deputy Secretary of Mines, and all other public officials, organizations, groups and individuals who in any manner whatsoever assisted in this study.

J. FRED. THOMAS, *Chairman,*
Committee on Strip Mining.

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RECOMMENDATIONS

1. Regulation of strip mining should be authorized by statute and declared to be within the police powers of the Commonwealth.

2. It should be unlawful for any operator to engage in commercial strip mining without first obtaining a permit from the Secretary of Mines.

3. Operators desiring to engage in commercial strip mining should make written application to the Secretary of Mines for an annual permit for each strip pit, paying an annual fee of $25.00 for less than 25 acres to be stripped, $50.00 for 25 acres or more but less than 50 acres, $75.00 for 50 acres and over.

4. The Secretary of Mines should have power to revoke the permit for noncompliance with rules and regulations or violation of the act.

5. The operator should annually submit to Secretary of Mines duplicate copies of maps, showing location and description of land to be stripped.

6. After removal of coal, the operator should, within a reasonable time and in a manner designated by the Secretary of Mines, refill the pits and replace and relevel the surface and overlapping soil, in such manner as is practicable, feasible and necessary to minimize the hazards of floods, pollution of bodies of water, accumulation of stagnant waters, etc.

7. The operator should file with the Secretary of Mines, a bond, conditioned upon the faithful compliance with the act and rules and regulations; such bond to be $500 for the first five acres and $50 for each acre or portion thereof in excess of five acres; bond to be increased or decreased in accordance with the number of acres in operation.

8. In lieu of a bond, the operator may deposit with the Secretary of Mines, $50 cash for each acre of land proposed to be stripped.

9. Any unexpired permit should be effective so long only as the operator shall possess the legal right to recover coal from the land described in the permit.

10. The authority of the Secretary of Mines to require improvements should terminate within 6 years after the end of the permit year.

11. The Secretary of Mines should have authority to grant, refuse, modify, revoke or cancel permits and have power to carry out and administer the provisions of the act.

12. No permit should be refused, cancelled, or revoked until after hearing on written charges has been had before the Secretary, testimony to be taken stenographically, and operators aggrieved to have the right of appeal to the court of common pleas of the county where the stripping is or was being done, or to be done; the case to be heard on the record and no additional testimony to be taken. From the decision of the common pleas court, appeal may be taken to the Superior Court of Pennsylvania.

13. A judgment should not act as a bar, after one year, on either party to apply for a new permit or to revoke or refuse to renew such permit for any cause which may thereafter accrue or be discovered.

14. The Secretary of Mines should have authority to subpoena witnesses and records.

15. Violation of the act should constitute a misdemeanor and on conviction, defendant should be subject to a fine of not less than $250 nor more than $5,000.

16. The act should become effective 60 days after final enactment.

Chapter I

SOME PERTINENT FACTS ON THE COAL MINING INDUSTRY AND A BRIEF HISTORY OF STRIP MINING

Facts

Coal has contributed tremendously to the progress of civilization. It is not only used as a means of heating the homes of millions of people, but furnishes a large percentage of the power that moves trains and ships and, in general, turns the wheels of industry. From it are distilled hundreds of by-products, many of which are found in general and commercial use and upon the shelves of drug stores throughout the entire world.

Coal is found beneath the surface of the earth in the form of seams or beds. These seams differ in thickness. Some of them are as thin as two feet or less, while others are found to be as much as fifty feet or more in thickness, and located at depths below the surface ranging from a few feet to more than 2,500 feet.

The total coal reserves in the United States are estimated at three trillion tons.[1] A little more than half of this total is low-grade bituminous and lignite.

Thus far, about 26 billion net tons have been mined in the United States. By far the greater part of the mined coal has been taken from mines east of the Mississippi River. Only 30 percent of the coal reserves in the United States are located east of this river. This indicates that 70 percent of the coal reserves in the United States are located west of the Mississippi.[1]

Pennsylvania with large deposits of both anthracite and bituminous coal ranks ninth among the coal states, with its estimated original coal deposits amounting to 154 billion net tons. Approximately 140

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[1] Pennsylvania Department of Mines, "Some Facts Concerning Coal in Pennsylvania," December 27, 1943.

billion net tons of this valuable fuel remain unmined in the Keystone State.[1]

The Anthracite Region, located in the northeastern part of Pennsylvania, consists of 484 square miles and contains 16 principal beds or coal seams. The Bituminous Region, located in the western part of Pennsylvania, consists of 14,200 square miles, with ten principal beds.

The original coal deposits in the anthracite field of Pennsylvania amounted to about 21 billion tons. Of this amount, about 5 billion tons have been removed since the beginning of mining in 1807.

The average anthracite production in Pennsylvania during the past five years has been 54 million net tons per year and during the year 1944 production jumped to 64 million tons.

Estimates place the life of the anthracite field at about one hundred years at the present rate of production. This would indicate that the present extractable amount of anthracite coal in Pennsylvania would approximate from 6 to 7 billion tons.

According to the Topographic and Geologic Survey of the Bituminous Coal Fields of Pennsylvania, published in 1928, the state contained deposits of approximately 44 billion tons of recoverable bituminous coal. It is estimated that since that time 1½ billion tons have been mined, leaving approximately 42½ billion tons of recoverable coal in the bituminous coal fields of central and western Pennsylvania.

The average annual bituminous production in Pennsylvania during recent years has been 130 million tons and for 1944 it was 144 million tons.

The operation of extracting coal from the earth is carried on by two principal methods, that is, deep mining and open-pit or strip mining. By far the greater portion of coal is taken from the underground by deep mining. Recently, however, there has been a sharp increase in the amount of coal recovered by strip mining.

Brief History of Strip Mining

In the early days, the recovery of coal by the process of what is generally termed as strip mining was known as quarry mining; that is,

[1] Pennsylvania Department of Mines, "Some Facts Concerning Coal in Pennsylvania," December 27, 1943.

the overburden was removed from the coal beds lying close to the surface either by hand or by horse-drawn scrapers, thus exposing the coal and making it available.

Later, the work of removing the overburden was performed by steam shovels and since the advent of the general use of the gas engine, quite a few operations have been carried on by use of gas-driven shovels, and quite recently by large electric powered shovels. At the present time, it is not uncommon to find a shovel with a capacity of 30 to 35 cubic yards engaged in removing the overburden from the coal beds, and shovels from five to seven cubic yards capacity loading the coal into trucks and cars.

Coal stripping was practiced in the anthracite fields as early as 1821, which means that stripping to at least a limited degree has been carried on for over a century. However, it was only during the last twenty years, and since the application of gas and electric power and the construction of tremendous and powerful excavating machines that stripping has developed into a major industry, as evidenced by production figures.

In 1940, of the 162,943,370 tons of coal recovered in Pennsylvania, 8,818,971 tons were produced by strip mining, or 5.4 percent. In 1944, of the total of 208,521,007 tons of coal produced, 33,136,280 tons were obtained by strip mining, or 16 percent. Tables 2 and 3 at the end of this report contain coal production figures by the different methods for the period 1940-1944.

Chapter II

A SUMMARY REVIEW OF STATEMENTS AND SUGGESTIONS OR RECOMMENDATIONS ON STRIP MINING MADE TO THE COMMITTEE BY OPERATORS, ORGANIZATIONS AND GOVERNMENTAL OFFICIALS

The statements made, and the information, data and suggestions or recommendations submitted on strip mining to the committee, by the various individuals, officials and organizations, might be summarized under three major headings:

A. Facts and Statistics on Strip Mining.

B. Objections to Strip Mining.

C. Suggestions or Recommendations on Strip Mining.

A. FACTS AND STATISTICS ON STRIP MINING

1. Economic Values of the Coal Stripping Industry in Pennsylvania

BITUMINOUS

It was submitted that bituminous coal stripping operations are being conducted in at least 22 counties of the central and western sections of the state. At the present time, it was estimated that the State of Pennsylvania contains approximately 421½ billion tons of recoverable bituminous coal.

Information based on a questionnaire circulated by the Mineral Producers' Association to 350 companies engaged in strip mining in the bituminous region, indicates that they control a total, both owned and leased, of approximately 106,000 acres. It was estimated that one-half of this area, or 53,000 acres, contains coal which may be recovered by strip mining. The veins of coal vary in thickness from 20 inches, yielding approximately 3,000 tons per acre, to 84 inches, yielding approximately 10,000 tons per acre. Information further indi-

FIGURE 1. AREA STRIPPED IN CORSICA, JEFFERSON COUNTY, IN 1917-1919 AND PLANTED BY SCHOOL CHILDREN

FIGURE 2. ANOTHER PART OF AREA STRIPPED IN CORSICA, JEFFERSON COUNTY, IN 1917-1919

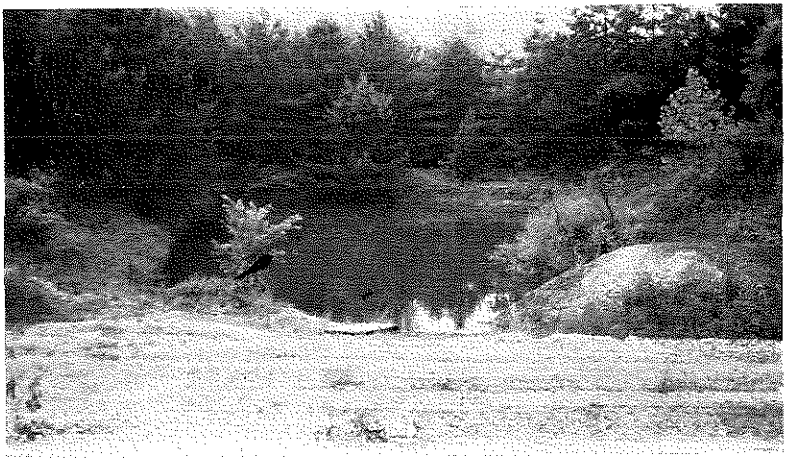

FIGURE 3. AREA STRIPPED DURING WORLD WAR I, 1917—OLD EXPORT MINE NEAR WESTLAND, WASHINGTON COUNTY. PLANTED ABOUT 1924-1925

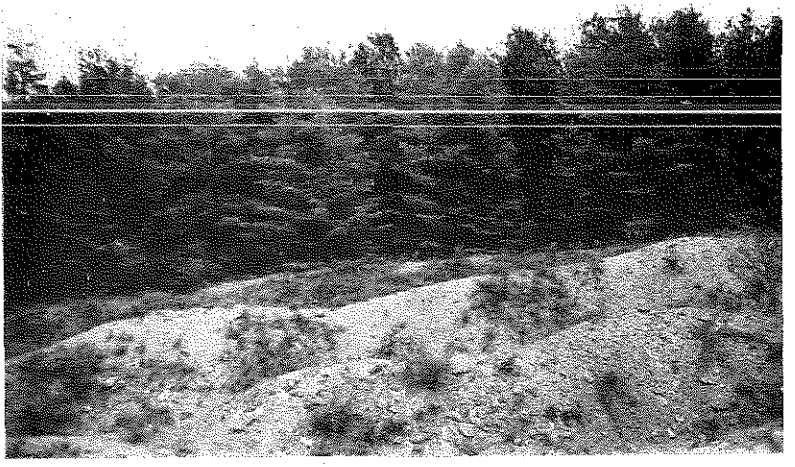

FIGURE 4. OLD EXPORT MINE, WASHINGTON COUNTY. PLANTED ABOUT 1924-1925

FIGURE 5. AREA STRIPPED BY TASA COAL COMPANY DURING WORLD WAR I, 1917—NOW A PART OF PUBLIC PARK, BOROUGH OF GROVE CITY, MERCER COUNTY. PLANTED BY BOY SCOUTS AND PUBLIC ABOUT 1925

FIGURE 6. AREA IN KINGSVILLE, CLARION COUNTY, STRIPPED 1939-1940. PLANTED BY C.C.C. UNDER DIRECTION OF SOIL CONSERVATION, DEPARTMENT OF AGRICULTURE

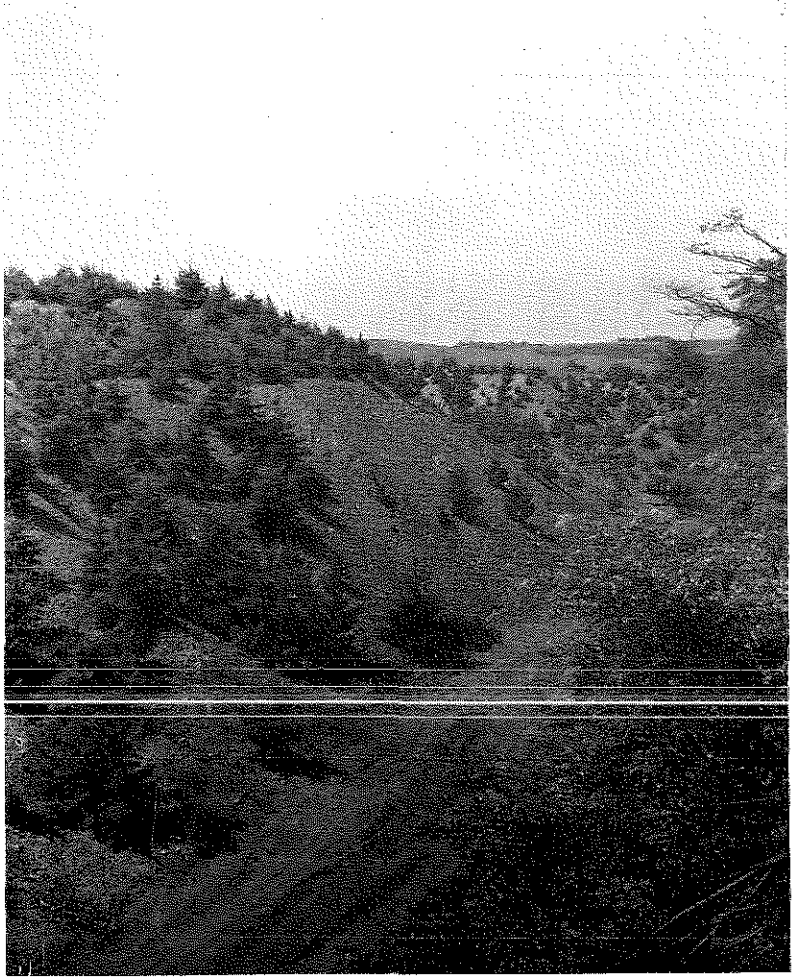

FIGURE 7. SPOIL BANK NEAR SLICKVILLE, WESTMORELAND COUNTY, PENNSYLVANIA, VISITED BY COMMITTEE ON STRIP MINING, SEPTEMBER 1, 1943

cated that approximately 265 million tons of bituminous coal may eventually be recovered in this state by open-pit or strip mining methods.

Assuming that the post-war period will result in a decrease in production, it was estimated that the probable future life of strip mining, based on recent figures of production in the bituminous field of Pennsylvania, will be 40 to 45 years.

When the coal has been recovered from all the available strip mining lands in the state, it was stated that it will represent an area of approximately 98 square miles in the bituminous field and approximately 9 square miles in the anthracite region, which is 107 square miles, or slightly in excess of one five-hundredths of the total area of the state.

It was pointed out that a great deal of strip mining is now being carried on in districts which had been considered as worked out by deep mine operators. Some of these ghost towns, it was said, have come to life with the opening of strip mines nearby. Many thousands of dollars of back taxes have been paid due to the opening of strip mines. Additional thousands of dollars of mortgages have been paid off by operators of strip mines.

Figures submitted show that an average acre of farm land will produce $15.00 of revenue or wealth per year, or a total of $795,000 for 53,000 acres. Assuming all of the 53,000 acres are stripped, this will produce 265 million tons of coal. At present market prices, now averaging $3.00 per ton, this would create wealth of $795,000,000 and at $2.00 per ton, $530,000,000. Each acre of coal is producing revenue of approximately $10,000. It would take a farmer 666 years to create an equal amount of wealth from his acre of land as it would take through stripping and the recovery of coal.

It was stated that open-pit mines of the bituminous field are producing coal at a cost below that of deep mines of the same field. Thus, the buying public is purchasing fuel produced by stripping at an average of 25 cents per ton less than deep-mined coal, or an annual saving of approximately $2,500,000.

It was made clear that much of the coal would not be recovered if stripping were not engaged in and that this method was necessary for the economic recovery of coal. It was pointed out that deep min-

ing could not be used to recover much of the coal which is close to the surface, and that such coal, formerly abandoned in deep mining, could now be removed through stripping operations with the available large steam, electric or gas shovels.

Data was submitted that two-thirds of the acreage in the bituminous field which was under stripping was leased by coal companies from individual land owners, and the average royalty is approximately 15 cents per ton, or $750 per acre. On the basis of $750 per acre, the land owners will receive approximately $26,489,000 for their coal.

The point was further made that the average freight rate on a ton of coal in Pennsylvania is approximately $2.00. Open-pit industry has created a revenue value to railroads of some 20 million dollars. In addition, individual and contract truckers hauling coal are receiving approximately 4 million dollars per year.

The companies who have reported on their operations, have equipment of the value of $7,207,000, or an equipment investment of $194,806 per company. Equipment used in all strip mining operations was estimated as valued at approximately $68,182,100.

It was indicated that, in the bituminous region, approximately 4,063 men were employed in strip mines in 1942, with a total annual payroll of approximately $13,602,924.

Anthracite

In the anthracite industry, figures were presented showing that in the decade from 1932 to 1941 at least 493 million tons of anthracite coal were produced, of which 61 million tons were recovered by strip mining.

It was stated that anthracite coal exists in 11 counties in the State, with an area of 6,368 square miles, 484 miles of which is underlaid with coal, or 7.6 percent of the total area, and that only fifteen-hundredths percent of the total area of the counties is now subjected to stripping operations.

It was stated that the gross business done by the anthracite industry from 1932 to 1941 inclusive was $3,394,000,000. During this period, the industry suffered a total cash loss of $123,984,000, while invested capital shrank from $798,000,000 to $378,000,000, or a shrinkage of 52.6 percent.

It was pointed out that anthracite deep-mining is fast becoming an unprofitable industry and that stripping income is an aid in offsetting some of the losses.

Another pertinent statement was made that stripping of coal in Pennsylvania has become a substantial industry,—one which is making a valuable contribution to the war effort and will have a definite place in any post-war economy,—and that a large proportion of property being stripped was not valuable as agricultural land even prior to stripping.

The point was made that anthracite stripping produces approximately seven to eight times more coal tonnage per acre than bituminous.

It was pointed out that the mining industry in the anthracite region accounts for 19.3 percent of the total employes in those counties and that it is responsible, directly or indirectly, for the employment of approximately 50 percent of the employed population. One coal company engages as many as 8,800 employes, of which 900 are employed in stripping operations. In addition, this same company is lessor of certain operations which engage 5,500 employes and of this number, 500, or approximately 10 percent, are engaged in stripping.

It was emphasized that this same company, in the four years prior to 1944, lost more than $9,000,000 in deep mining operations. However, on strip mining and other surface operations, it was able to show a profit of $8,900,000. This information was offered to point out the inadvisability of enacting legislation which would disturb economic conditions that make it possible to continue employment involving such a large payroll of so many thousands of employes.

2. The War Effort and Labor Supply

There was agreement that the war effort was being aided because through stripping a considerably smaller number of employes are required to produce the same amount of coal.

With the labor shortage, it was emphasized that the war effort would have been considerably impeded if the coal industry had not been prepared with its equipment to engage in stripping operations on a large scale.

However, it was the opinion of some individuals that it is probable that after the war about half the strip mining operations in the

bituminous fields might be halted. No specific data was submitted enlarging on this view or in support of the statement.

3. Hazards, Accidents and Fatalities

The statement was made that strip mining reduces accidents and fatalities in the mining industry. In support thereof, it was pointed out that in the anthracite field, for the calendar year 1942, in deep mining there were 221 fatalities or 211,657 tons mined for each fatality, while in the strip mining industry, only four fatalities occurred, or 2,414,327 tons mined for each fatality. Ordinary accidents, it was stated, are considerably less than those in deep mining.

In further substantiation of the hazard factor, workmen's compensation rates were submitted showing that in anthracite deep mining, the rate is $11.00 per $100 of payroll, while in strip mining, it is $2.75 per $100 of payroll, or $8.25 less per $100 of payroll. While no such figures were submitted at the hearings for the bituminous field, it was learned that workmen's compensation rates for that district are $6.00 per $100 of payroll in deep mining and $2.75 per $100 of payroll in strip mining.

4. Reclamation, Backfilling, Leveling and/or Reforestation and Costs

It was stated that the cost of backfilling would vary with local conditions. Blueprints and charts were submitted of proposed plans for some backfilling, leveling and reforestation. The estimations varied considerably as to the cost. In the bituminous stripping operations, it was pointed out that the costs of partial backfilling and leveling would not be prohibitive. However, in the anthracite area, it was pointed out that it would be impracticable, unnecessary and prohibitive in most cases.

There appeared to be agreement that it would be too costly to level completely or restore the original contour, and it was pointed out that complete leveling was not necessary.

However, the cost of planting spoil banks, based on the experience of one of the bituminous operators, indicated that it might vary from $6.00 to $17.00 per acre. In the anthracite field, one operator

ventured the prediction that it might cost as much as $1.16 to $1.40 per ton to backfill.

It was also indicated that in Illinois, the operators were of the opinion the cost of backfilling in their state would be anywhere from $1,100 to $3,800 per acre, or 25¢ to 50¢ a ton, depending on the type of material handled and the depth of the overburden. Here again, it was pointed out that Illinois was working on level ground, while in Pennsylvania the strippers are working on hillsides and the spoil banks are deposited in such a position that it would be almost physically or mechanically impossible to restore much of the original contours.

5. Recovery of Lands Since Stripping Started

Representatives of several stripping operators indicated that plans have been adopted for reclamation of stripped land in the bituminous field. Extensive programs have been undertaken, which include removal of the peaks of the spoil banks and some revegetation and reforestation.

The plans indicate that the bulldozer would be used to knock off the top of the peaks, depositing the earth into the bottom of the pit from which the coal was removed, and following that with the use of an angle-dozer, a tractor grader or possibly a scraper, which would cover much of the entire pit, and arrange the spoil banks into such shape as would prevent surface water from causing excessive erosion. It would then be followed up by the planting of some crop, clover or red grass, or forest products. It is estimated that the cost of this work would be $150 per spoil acre, including the cost of the crop and tree planting. It was stated that such reclamation programs were interrupted during the war due to the lack of manpower.

It was indicated that, in the anthracite territory, nature has taken care of a certain amount of reforestation.

It was agreed that the problems resulting from strip mining and the solutions to be undertaken are not identical in both fields. In the bituminous field, it was not considered as too costly and impracticable to reclaim through some backfilling and reforestation. However, in the anthracite field, reforestation on almost perpendicular sides of the mountains or hills presents a difficult problem. In the latter case, it was pointed out that overburden material may or may not support

tree growth. However, the Department of Forests and Waters stated that it has received permission from several coal companies in the anthracite field to make experimental plantings and to determine how much reclamation is possible.

It was also pointed out that stripping in the southern and middle districts of the anthracite field is of greater importance than the northern field. The geology is such that the pitching nature of the seams gives greater stripping possibilities.

B. OBJECTIONS TO STRIP MINING

The objections to strip mining, as stated to the committee, are summarized as follows:

1. Reduction in Assessments and Land Values

Local officials deplored the fact that stripping produces hazardous and unsightly open pits and spoil piles. Also, through coal removal, the value of the land is reduced, and will require reductions in assessments. This, it was pointed out, means a permanent loss in revenue for local governments. It was added that farm lands used for coal stripping will lose their crop and subsurface mineral value with an ultimate reduction in assessment.

However, no figures were submitted showing the cases in which land assessments were reduced or increased. It was contended on the other hand that stripping would increase values with the utilization of virtually inactive or abandoned lands under which coal was present and deep mining was impractical. It was advanced that stripping would reduce or eliminate tax delinquencies.

The irreparable destruction of natural resources was a point emphasized, since the agricultural and mineral value will be gone forever. The operators answered this by submitting plans for some leveling and reforestation and pictures showing natural growths of grass, seedlings, bushes and small trees; and conceded that some regulation for reforestation would aid in restoring the land in time.

2. Destruction of Farm Lands

It was contended that stripping destroys good farm land and retires permanently food-producing soil. In some cases, the tearing up

of good farms affects even the value of adjoining farms. The point was also made that stripping produces only one crop of coal, while agricultural development goes on indefinitely and, further, that destruction of farm land would be harmful to posterity in removing land to replace much of the farm land being retired gradually through normal usage and natural causes.

To counter these contentions, it was pointed out that no actual figures were submitted as to the amount of farm land being destroyed; that, in the main, poor or abandoned or useless land was stripped; that the area to be affected was negligible, amounting in all to 107 square miles which could or would be stripped; that the income per acre within one year, from royalties, would take the owner or farmer several hundred years to earn through farming and that through natural action or required minimum refilling, releveling and/or reforestation to which many operators are willing to submit, there would not be a permanent economic or tax loss.

3. Health and Water Supply

The point was made that large strip mine pits or holes not properly drained become sources of insect breeding. This may be caused by stagnant water or a supply of good water becoming polluted through seepage of acids or polluted water into good water supply from stripping holes. It was contended that the water supply may be seriously affected in certain areas due to accumulation of stagnant water in open voids. Seepage of water may result in a necessity for increased pumping in underground workings and also might result in increased cost of supplying of good water.

These points were not refuted except that it was conceded that some control and regulation would minimize or eliminate these dangers.

4. Hazards—Stripping within Municipal Limits

The unsafe conditions in which the unguarded holes are left was also emphasized. These holes were considered as definite hazards, especially when the operations extend into built-up sections of a community. This was countered with the statement that few of such operations are conducted within built-up sections and it was agreed that stripping in certain areas where it is definitely dangerous should be prohibited.

5. Irresponsible Operators and Unpaid Wages

Labor representatives made the point that irresponsible "fly-by-night" operators or contractors would strip a small section of land and then "skip." If this practice continued without interruption, it would cause a breakdown of the wage structure and in some instances wages would remain unpaid. It also results in undercutting the market price of coal, a resultant loss to legitimate operators and encourages bootlegging.

C. SUGGESTIONS OR RECOMMENDATIONS ON STRIP MINING

The suggestions or recommendations submitted to the committee by various individuals, organizations and officials may be summarized as follows:

1. Reclamation, Refilling, Leveling and Reforestation

Limited refilling and reforestation by the Commonwealth or the operators or both assuming some responsibility should be required.

Limited refilling to consist of depositing some of the overburden back into the pit and some self-draining should be required.

The peaks of the spoil banks should be leveled off, pits to be partially filled to prevent stagnant pools and exposed coal should be covered.

Reforestation should include planting sugar maples, and suitable forest and fruit trees, and sowing of grasses and sweet clover on the spoil banks.

2. Recreation and Fishing on Stripped Lands

State officials pointed out that the use of strip-mined land for recreational and game purposes was not generally desirable. However, the state has taken over some stripped land and revegetation or reforestation has been undertaken.

3. Regulation, Permits, Licenses, Bonds, Forfeitures, Etc.

Legislation for the bituminous field was considered as generally acceptable to the operators but opinion was divided as to the anthra-

cite field. There was no unanimity as to whether the regulation should be on a State or local basis.

Regulation should provide for obtaining a permit or license before operations begin and provide for revocation for violations. Regulation should require planting of trees under supervision, so as to furnish sites for wild life development for conservation to decrease soil erosion, and furnish valuable timber supply.

The suggestions for fees varied from an annual permit fee of $10 per year to 5 cents a ton for each ton stripped, with a bond to insure faithful performance.

4. Tax on Stripped Coal to Cover Costs of Regulation

Some individuals expressed the opinion that the coal stripped should be taxed five cents per ton and the money used by the Department of Mines or the Department of Forests and Waters in restoring the land to the original contours where it was determined by the State and local officials that it was practical. The land restored should then be used as pasture, forest or woodland.

TABLE 1[1]

COAL PRODUCTION INCLUDING STRIP MINING PENNSYLVANIA AND CERTAIN SELECTED STATES 1938-1943

State	*Total Production (net tons)*	*Stripping Production (net tons)*	*Percentage of Total Production from Strip Mining*
Illinois	323,000,000	81,000,000	25.5%
Indiana	116,000,000	64,000,000	55.0%
Pennsylvania	674,000,000	36,000,000	5.5%
Ohio	139,000,000	32,000,000	23.6%
West Virginia	200,000,000	9,000,000	4.0%

[1] "Economic Survey of Open Pit Mining and Reclamation," by Woomer and Associates, Mining Engineers, Wheeling, West Virginia, Sept., 1944.

TABLE 2[2]

TOTAL PRODUCTION AND STRIP-MINE PRODUCTION OF BITUMINOUS COAL IN PENNSYLVANIA—1940-1944

Year	*Total Production (net tons)*	*Stripping Production (net tons)*	*Percentage of Total Production from Strip Mining*
1940	111,416,916	2,808,607	2.5%
1941	127,469,207	6,463,160	5.1%
1942	142,759,563	10,313,160	7.2%
1943	139,801,363	17,177,054	12.3%
1944	144,408,418	22,211,661	15.4%

[2] Pennsylvania Department of Mines.

TABLE 3[3]

TOTAL PRODUCTION AND STRIP-MINE PRODUCTION OF ANTHRACITE COAL IN PENNSYLVANIA—1940-1944

Year	*Total Production (net tons)*	*Stripping Production (net tons)*	*Percentage of Total Production from Strip Mining*
1940	51,526,454	6,010,364	11.6%
1941	53,942,117	7,855,945	14.6%
1942	57,939,629	9,657,307	16.6%
1943	60,511,730	8,688,896	14.3%
1944	64,112,589	10,925,619	17 %

[3] Pennsylvania Department of Mines.

TABLE 4[4]

PRODUCTION OF DEEP-MINED AND STRIP-MINED COAL IN PENNSYLVANIA AND EMPLOYES ENGAGED THEREIN FOR THE YEAR 1944

(Bituminous)

County	*Deep Mine Production*	*Deep Mine Employes*	*Stripping Production*	*Stripping Employes*
Allegheny	15,634,782	9,617	2,906,513	729
Armstrong	4,852,362	3,303	683,384	297
Beaver	123,613	165	216,867	125
Bedford	564,658	806	174,183	71
Blair	112,293	135	.....	...
Bradford	1,658	7	2,368	6
Butler	664,585	739	518,687	206
Cambria	17,682,736	14,542	823,453	467
Cameron	.....	.....	3,897	5
Centre	693,789	728	517,453	256
Clarion	1,308,277	1,046	1,988,744	654
Clearfield	3,897,310	3,342	2,499,149	1,370
Clinton	60,014	65	163,374	106
Elk	636,291	608	.....	...
Fayette	21,658,694	16,291	1,009,569	423
Greene	8,217,762	5,890	270,014	117
Huntingdon	526,847	555	70,561	109
Indiana	9,034,300	5,945	1,735,228	706
Jefferson	1,756,367	1,529	524,075	298
Lawrence	5,851	9	53,499	45
Lycoming	44,145	44	.....	...
Mercer	126,649	138	507,683	107
Somerset	7,202,165	5,616	1,034,400	523
Tioga	242,582	228	25,595	20
Venango	3,500	7	42,359	9
Washington	16,708,538	12,789	4,420,788	1,055
Westmoreland	10,436,989	7,377	2,019,818	717
Region Total	122,196,757	91,521	22,211,661	8,421

[4] 1944 Annual Report, Pa. Department of Mines.

TABLE 5[5]

PRODUCTION OF DEEP-MINED AND STRIP-MINED COAL IN PENNSYLVANIA AND EMPLOYES ENGAGED THEREIN FOR THE YEAR 1944

(Anthracite)

County	*Mine*	*Stripping*	*Bank*	*Total*	*Employes*
Carbon	2,075,689	1,134,422	434,766	3,644,877	4,940
Columbia	1,086,354	37,274	24,313	1,147,941	1,711
Dauphin	.....	.....	299,349	299,349	149
Lackawanna	7,904,565	446,394	1,076,508	9,427,467	12,344
Luzerne	20,771,150	1,771,866	2,267,026	24,810,042	33,660
Northumberland	2,831,338	1,936,652	975,454	5,743,444	6,409
Schuylkill	7,858,578	5,559,626	5,416,390	18,834,594	18,721
Sullivan	91,530	39,385	16,841	147,756	211
Susquehanna	37,981	.....	8,235	46,216	*
Wayne	2,304	.....	8,599	10,903	*
Total	42,659,489	10,925,619	10,527,481	64,112,589	78,145

* Not segregated from Lackawanna County.

Man-days for region	22,809,700
Production per fatal for region	377,133

[5] 1944 Annual Report, Pa. Department of Mines.

APPENDIX

SUMMARY OF PROVISIONS OF STRIP MINING LAWS OF OTHER STATES

Indiana: Act of 1941

1. Purpose of Act.
   (a) Exercise of police powers of the State.
   (b) For protection of property, economic welfare and health of the people by providing for conservation and improvement of areas of land subjected to strip mining.
   (c) To aid in protection of game, bird and wild life; to enhance value of land for taxation; to decrease soil erosion, the hazard of floods, the pollution of streams and lakes, and generally to restore the usefulness of such lands.

2. Definition.
   Strip mining defined: Commercial strip mining means operators who produce over 250 tons in one year.
   "Operator" defined . . .
   "Pit defined" . . .
   Administration under the Director of the Department of Conservation.

3. Operator.
   Commercial operator must obtain a permit from Department of Conservation.

4. Fees.

Less than 25 acres	$25 annually.
25 acres and under 50	$50 annually.
50 acres and over	$75 annually.

5. Operators' requirements.
   (a) Submit on or before Sept. 1 annually a map showing extent and place of operations.
   (b) Shall sow, set out or plant, seeds, plants or cuttings of trees, shrubs or grasses as recommended or approved by the Director. Such planting to cover either the stripped land of present year or an equal area of other lands previously stripped.

Also required to plant at least 1% of lands previously stripped by said operator.

6. Plantings.

   All plantings shall be made with stock furnished by the Director from state nurseries at standard prices. Operator may purchase approved stock elsewhere if such stock can be purchased below the prices quoted by the Director.

7. Bond.

   Operators shall file bond for faithful performance of provisions of this act in amount of at least $125 for 5 acres or less, and $25 additional for each acre above five acres. Operator may deposit cash in lieu of bond in certain cases.

8. Permit—Termination.

   Director shall require the improvements within 6 years.

9. Power of Director.

   Director shall have power to grant, refuse, modify, revoke, or cancel permits, in accordance with the acts of the general assembly, and shall have full power to administer the provisions of this act.

10. Permit Cancellation or Revocation—Hearing.

    Permits shall not be revoked without a hearing. Aggrieved operators may appeal to the courts from any decision of the Director.

11. Rules and Regulations.

    Director authorized to draft and promulgate rules and regulations.

12. Violations—Penalty.

    Fine of not less than $1,000 or more than $5,000.

West Virginia: March 11, 1939

(This act became a law without the approval of the Governor.)

1. Unlawful to mine coal by uncovering surface soil without first:
   (a) Obtaining permit from Chief of Department of Mines.
   (b) Furnishing corporate surety bond for not less than $150 per acre to guarantee refill and replacing of soil, subsoil and other strata.
2. The Chief of the Department of Mines to administer the law.
3. Penalty—Violation creates a misdemeanor, subject to fine of not

less than $50 nor more than $500 or imprisonment of not more than 1 year or both.

Illinois: Act of 1943

(Under litigation at present.)

1. Any person, firm, corporation or association engaged in strip mining shall:
   (a) Spread the soil or strata removed so that the contour of the surface is approximately the same as before operating. This shall be done progressively so that not more than three spoil ridges shall be unleveled at any time during the operation.
   (b) When an operation is complete, all spoil ridges shall be leveled except that the last open cut shall not be required to be totally filled.
2. Administration of act under the Director of Department of Mines and Minerals.
3. Operator must obtain permit to operate. Permit annual fees as follows:

Less than 25 acres in 1 year	$25
25 acres to 50 acres	$50
50 acres to 75 acres	$75
75 acres or more	$100

   Operator must furnish maps, plans, showing location and extent of operation.
4. Operator shall file a bond payable to the people of the State of Illinois, that the operation will faithfully carry out the provisions and requirements of the Act.
   Bond shall be not less than $2,000 and $400 additional for each additional acre stripped over 5 acres.
5. Provision is also made for short term operators to deposit cash in the amount of $200 for each acre operated or intended to be operated within 3 months, with the privilege of increasing the acreage by additional deposits of $200 for each additional acre proposed to be mined.
6. The Department may release the bond and return the deposits when the operators have complied with the provisions of the Act.
7. Any unexpired permit shall be effective so long as the operator shall possess legal right and power by legal estate owned to mine coal from land described in said permit.

Department rights and jurisdiction shall cease at the end of 3 years from the end of the permit year in which operation of the stripping ceases.

8. The Department shall have power to carry out the provisions of this Act.
9. The Department may refuse to issue, suspend or revoke for the following reasons:
   (a) Violation by the operator of the provisions of the Act.
   (b) Failure to comply with Department rules and regulations.
   (c) Failure to renew permit.
10. Department shall hear complaints and investigate the actions of holders of permits. Shall proceed in hearing of complaints, etc.
11. Provision for court hearing on suspension and revocation.
12. Transcripts of proceedings to be kept and copies given to interested parties. Cost of transcript to persons to be 25 cents per hundred words.
13. Department makes written report of its findings, etc.
14. Restoration of permit is subject to the findings and decision of the Department.
15. Written refusal to issue permit must be signed by the Director.
16. Department may adopt rules, regulations, etc.
17. Operating without a permit—Penalty $50 to $1,000. Each day is considered a separate act.
18. All money received in fees shall be kept in a "special fund" in the State Treasury called the "open mining fund" and used to administer the Act.
19. $10,000 appropriated to carry out the provisions of this Act.