DIVISION OF RECLAMATION

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INTRODUCTION

During the 190 years of coal production in Ohio, almost 3.5 billion tons of coal have been mined. Although the earliest Ohio settlers reported using naturally outcropping coal, the first report of actual coal mining occurred in 1800, three years before Ohio's statehood, when 100 tons of coal were recovered by underground mining methods in Jefferson County. Production from Ohio's 21 mineable coal seams (Fig. 12.1) was limited to underground mining (Fig. 12.2) until the second decade of the 20th Century when the first surface mining began. With the advent of new technologies and huge machinery at the time of World War II, surface mining of coal became cheaper and quickly replaced underground mining as the predominant method (Fig. 12.3).

When coal is surface mined, all of the material above the coal seam to be mined is removed (or "cut"), leaving a shear rock face known as a "highwall." The cover material is called "overburden," and when overburden is removed and placed in piles, it is referred to as "spoil." Because of the sulfur content, exposed coal, and often some components of the spoil, produce acid when combined with air and water. Erosion of unprotected spoil can occur at rates one thousand times greater than erosion on undisturbed land. Streams near a surface mine became choked with sediment which was often toxic and created severe flooding problems.

The Ohio legislature took the first step toward regulating coal mining operations in June 1947 during the term of Governor Thomas J. Herbert. The law provided that the Chief of the Division of Mines in the Department of Industrial Relations be the permitting authority to provide for the conservation and improvement of land affected in connection with coal mining operations. In addition, it provided for identification of the area to be mined, a bond of $100 per acre, and the planting of the lands affected by mining with trees, grasses, or shrubs at a cost to the operator of the mine not in excess of $50 per acre.

In 1949, the General Assembly, with strong support from Governor Frank J. Lausche, developed additional legislation to provide for the regulation of surface coal mining and to require reclamation (Fig. 12.4). These efforts culminated in the Coal Strip Mine Land Reclamation Act passed by the 98th General Assembly and signed by Governor Lausche, effective on 23 July 1949. A new regulatory agency was to be responsible for administering this law, and the Division of Reclamation was created in the Ohio Department of Agriculture (ODA). Zoyd M. Flaler (Fig. 12.5) was named Chief, a position he held until December 1954.

COAL REGULATORY PROGRAM

Under the new law, reclamation of mined areas consisted of covering the exposed coal seam with three feet of spoil, grading to level off peaks and ridges in the spoil, and planting trees, grasses, or shrubs on the spoil (Fig. 12.6). In order to receive a permit for a coal mining operation, a coal operator had only to supply a description of the location of the area intended to be mined, names of the landowners, a $50-registration fee, and bond at a rate of $190 per acre to be mined. The bond was to be forfeited to the State when reclamation was not accomplished to the degree provided by the law.

The first amendments to the 1949 Act were added in 1955 when the operator's bond was increased from $190 an acre to $220. In those final cuts that could not be used for water impoundments, the amended law required that the bottom of the pit be covered with soil material suitable for plant growth and planted to trees, shrubs, or grass. The removal of coal by auger mining was included in the definition of surface mining, and it became mandatory for the Chief of the Division to refuse to issue a license to mine coal for failure to comply with the law. Dwight P. Miller (Fig. 12.7) was named Chief in December 1954 and served until January 1960.

Further amendments to the law in 1959 transferred the Division of Reclamation from ODA to the

Figure 12.1. The coal field of Ohio includes 21 mineable seams in 35 counties in the eastern and southern part of the state.

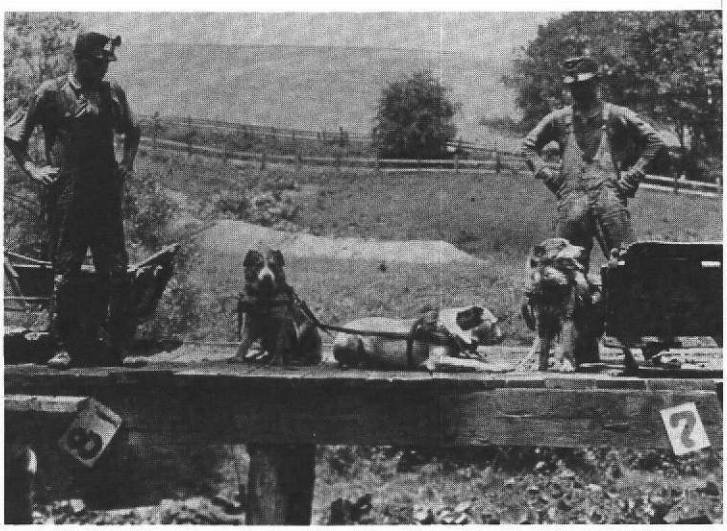

Figure 12.2. Dogs formed part of the work force at this mine in Muskingum County, circa 1915. Photo courtesy of Michael C. Hansen.

Ohio Department of Natural Resources. This legislation also provided that the State acquire prelaw or other unreclaimed surface mined land and develop it for the benefit of the State. This resulted in the acquisition of sizable tracts of unreclaimed lands in Perry, Harrison, and Jefferson Counties from capital improvement funds appropriated for this purpose. These lands are now reclaimed and are being administered as State Forests by the Division of Forestry. Irving I. Dickman (Fig. 12.8) was named Chief in 1960.

Major statutory changes were made again by the General Assembly in 1965 with the Division of Reclamation and the Division of Forestry being combined into a new Division of Forestry and Reclamation with Dickman as Chief, a position he held until November 1969. In addition to operational updating, which included an increase in fees and bond, major revisions were made to the reclamation provisions. The grading requirement of "gently rolling topography" was expanded to "gently rolling, sloping, or terraced topography." A prohibition was added to prevent "long uninterrupted slopes," and the graded surfaces of reclaimed spoil banks were required to be left free of large

Figure 12.3. The efficiency of giant shovels (as pictured) and draglines to remove overburden made surface mining of coal less expensive than underground mining after World War II. Office of Public Information and Education file photo.

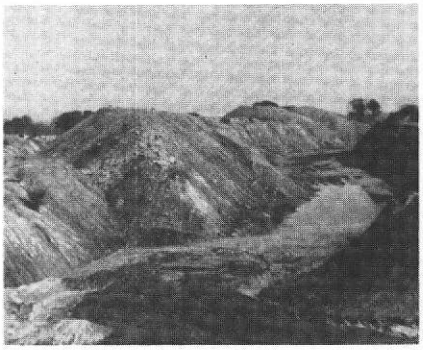

Figure 12.4. "A Typical Last Cut" of an Ohio surface mine in the late 1940's and early 1950's. This print is from: Ohio Department of Agriculture Official Report for the Period July 1, 1950 to June 30, 1952. *p. 136. Courtesy of Zoyd Flaler.*

Figure 12.5. ***Zoyd M. Flaler****, first Chief of the Division of Reclamation when it was a part of the Ohio Department of Agriculture, 1949-1954.*

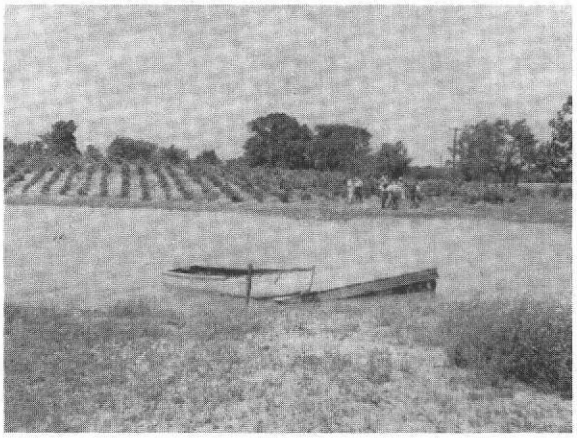

Figure 12.6. This site in Columbiana County was mined in 1949 and reclaimed by East Fairfield Coal Company of North Lima. The last cut was dammed to form a lake and pines were planted in 1953. This 1956 photo is from: Ohio Department of Agriculture Biennial Report--July 1, 1954 to June 30, 1956. *p. 22. Courtesy of Zoyd Flaler.*

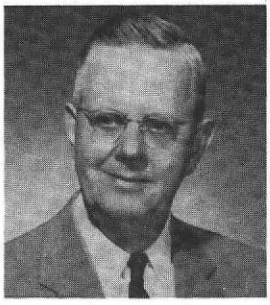

Figure 12.7. ***Dwight P. Miller****, Chief of the Division of Reclamation when it was part of the Ohio Department of Agriculture and briefly after it was transferred to ODNR, 1954-1960.*

Figure 12.8. ***Irving I. Dickman****, Chief of the Division of Reclamation, 1960-1964, and Chief of the Division of Forestry and Reclamation, 1965-1969.*

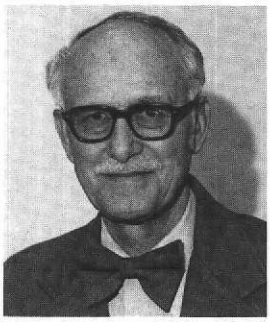

Figure 12.9. ***Ernest J. Gebhart****, Chief of the Division of Forestry and Reclamation, 1969-1973.*

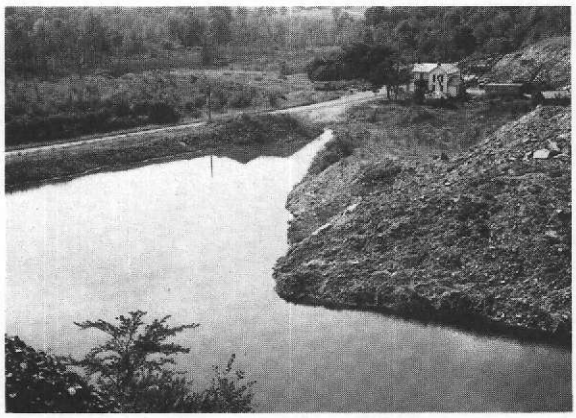

Figure 12.10. Inadequate reclamation in the 1960's stimulated enactment of the 1972 Ohio Strip Mine Law. Photo courtesy of John Wells.

rocks or other obstructions to allow for the use of suitable machinery for maintenance and harvest of crops from these areas. Specifications were established for the construction of access roads and fire lanes to prevent their erosion. Requirements were included for covering and revegetating the final cut bottom when water could not be impounded to a height sufficient to cover the exposed coal seam at the base of the highwall.

Coal operators were for the first time required to include a reclamation plan with the application for a surface mine license. In addition, revegetation plantings had to be successful or redone. Up to that time, planting was all that was required for a site legally to be reclaimed; survival of the plants was not necessary, and, indeed, many plantings had not survived. There was also a provision permitting the Chief to refuse to issue a license when there was a possibility of deposition of sediment in a stream bed or on the land of others. Ernest J. Gebhart (Fig. 12. 9) replaced Dickman as Chief in November 1969 and served until June 1973.

Lack of visible progress in restoring surface mined land to productivity and the failure to prevent off-site damage (Fig. 12.10) brought on yet another major and more drastic revision of the reclamation laws. What became known as the 1972 Ohio Strip Mine Law had its origin in dissatisfaction with the results of the 1965 amendments. In the late 1960's, the environmental movement focused attention upon surface mine regulations with priorities placed on completely backfilling the highwalls left by the last cut, saving and restoring the top soil, and preventing or minimizing erosion and water pollution. The most significant change required the operator to provide a detailed mining and reclamation plan for the Chief's review prior to issuance of a permit, thus moving the regulatory authority into the mining process.

Substitute House Bill 928 was the bill that eventually was chosen by the General Assembly to govern coal mining in Ohio, the 1972 Ohio Strip Mine Law. It was signed into law by Governor John J. Gilligan and became effective 10 April 1972. Thoroughly revising Chapter 1513 of the Ohio Revised Code (ORC), the language of the new statute was substantially tougher than comparable legislation in Ohio's neighboring Appalachian states, and later served as a model for a federal law that would govern mining nationwide. The new Ohio law required the establishment of cover crops of grasses and/or legumes rather than trees on reclaimed land (Fig. 12.11). In June 1973, the Reclamation unit was reestablished as a separate Division of Reclamation with Raymond L. Lowrie (Fig. 12.12), a federal employee, named Chief. He served to December 1974 when George Evans, also a federal employee, served as Chief for the first three months of 1975. Charles E. Call (Fig. 12.13) was named Chief in June 1976.

In 1977, the Surface Mining Control and Reclamation Act (SMCRA), based in part on Ohio's law, was passed by Congress and signed by President Jimmy Carter. The task of implementing the new federal law was given to the United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE). SMCRA set strict uniform standards for coal mining throughout the United States. It requires that any state that wishes to administer its own regulatory program adopt regulations that are as effective as federal regulations. Once a state's program has been accepted by OSMRE as being as effective as the federal program, OSMRE grants that state primacy over coal mining and reclamation operations within the state's borders. OSMRE is then required by law to oversee all state regulatory programs to ensure that they remain in compliance with federal regulations. Any state that fails to remain in compliance can lose its primacy as well as its federal Abandoned Mined Land funding.

Ohio responded to the enactment of SMCRA by amending some provisions of its law in 1981. Renamed the Coal Mining and Reclamation Law, it required that the landscape after mining closely resemble the original, premining contours (Figs. 12.14 and 12.15). Stricter standards were adopted for the segregation of topsoil and subsoil layers, placement of spoil, and treatment of toxic or acid-forming materials. Reclamation was required to take place simultaneously with mining, and revegetation efforts were required to meet specific success standards, with the operator assuming responsibility for the success of the

Figure 12.11. The 1972 Ohio Strip Mine Law encouraged establishment of cover crops of grasses and/or legumes rather than trees on reclaimed mined land. Division of Reclamation file photo.

Figure 12.12. ***Raymond L. Lowrie****, Chief of the Division of Reclamation, 1973-1974.*

Figure 12.13. ***Charles E. Call****, Chief of the Division of Reclamation, 1976-1983.*

revegetation for five years after planting. Requirements that mine operators publish in local newspapers notices of submittal of their permit applications and requests for bond release encouraged public input in the regulatory process.

Ohio achieved primacy with approval of the Division of Reclamation's regulatory program on 16 August 1982. OSMRE maintains a field office in Columbus and continues to monitor the Ohio regulatory program closely, preparing an annual report regarding Ohio's regulatory program and publishing proposed program amendments in the *Federal Register*. Larry Mamone (Fig. 12.17) replaced Charles Call as Chief in February 1983 and served until July 1987. R & F Coal Company of Cadiz received national recognition for its high quality reclamation at the Harrison County Home Mine when OSMRE presented the company with the Award of Excellence in 1987 (Fig. 12.16). Tim Dieringer (Fig. 12.18), a federal employee on an Intergovernmental Agreement, has served as Chief from August 1987 to the present.

In addition to the revisions to the surface mining law which occurred in 1981, the Division began issuing permits for the surface operations of underground mining operations. This new dimension of Ohio's regulatory program evolved very quickly from simple mapping requirements to a complete underground mining and reclamation application finalized in the latter part of 1989.

The revised rules also required the Division to regulate the surface effects of underground mining operations. These provisions were significant due to the increasing use of the longwall method of underground coal extraction by Ohio operators. Longwall mining is a method by which the entire coal seam is removed underground resulting in subsidence of the overburden subsequent to the removal of the coal. This subsidence can translate into surface subsidence causing damage to surface lands and structures. Liability for such damages was often waived in coal deeds conveying the rights to mine the coal. Landowners above longwall operations often did not have any legal remedy to address damage to their property caused by the mining. Although many longwall operators voluntarily repaired damages caused by their operations, the Division revised the regulations in 1989 to

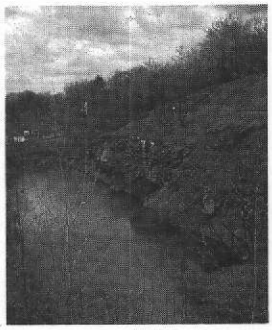

Figure 12.14. Highwall and water impoundment at the last cut in an Ohio surface mine (see also Figure 12.15). Division of Reclamation file photo.

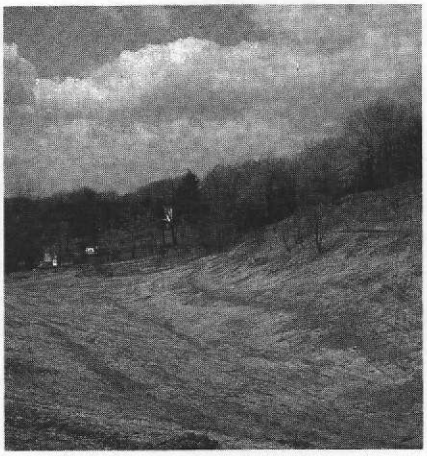

Figure 12.15. The site pictured in Figure 12.14 has been backfilled to the highwall and revegetated. In compliance with Ohio's Coal Mining and Reclamation Law of 1981, the landscape has been restored to resemble the original, premining contours. Division of Reclamation file photo.

Figure 12.16. The Harrison County Home Mine of R & F Coal Company of Cadiz is a national reclamation award site. In 1987, the federal Office of Surface Mining Reclamation and Enforcement presented the Company an Award of Excellence for its high-quality reclamation at this mine. Photo courtesy of R & F Coal Company.

Figure 12.17. ***Larry Mamone****, Chief of the Division of Reclamation, 1983-1987.*

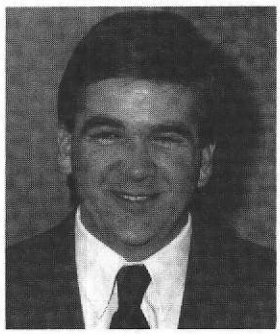

Figure 12.18. ***Tim L. Dieringer****, Chief of the Division of Reclamation, 1987 to the present.*

require repair of and/or compensation for damages caused by longwall mining regardless of any damage waivers contained in coal deeds. The Division also requires premining assessments of structures proposed to be undermined by the longwall method so that postmining damage can be assessed and corrected. By requiring repair and compensation for damages, the Division ensured that Ohio coal operators could continue to utilize a highly safe and efficient method of coal extraction while protecting surface owner rights and interests.

Ohio's Coal Mining and Reclamation Law has remained substantially the same since 1981. As a result of the evolution of the mining law, many of the long-term, on-site and off-site problems that were associated with earlier coal mining have been eliminated or reduced to controllable, minor, and contained problems of short duration. Since the enactment of SMCRA in 1977, severance taxes have been levied on active coal operations and distributed by the federal government as grants to states for the reclamation of abandoned mines and older mines which, although reclaimed to the standards of the day, may still cause flooding or other public health and safety problems, or degrade the environment.

THE RECLAMATION BOARD OF REVIEW

by **Linda Wilhelm Osterman**

By enactment of legislation, provision was made for any person claiming to be aggrieved or adversely affected by an order of the Chief of the Division of Reclamation to have the right to appeal for modification or elimination of the order. The Reclamation Board of Review was created in 1949 as an administratively separate appeal board with its five members (increased to seven in 1972) appointed by the Governor. It held its first hearing on 11 December 1952, but for the next 20 years, few appeals were heard because there were not many decisions by the Chief to review. The Board at that time acted primarily in an advisory capacity to the Chief.

During the 1950's and 1960's, the Board promoted annual reclamation tours organized by the Division of Reclamation and attended by persons from various agencies, the Ohio Reclamation Association (name changed to the Ohio Mining and Reclamation Association in 1975), other conservation organizations, and various Ohio colleges and universities. The primary purpose of the tours was to inform the public that reclamation could be accomplished in such a manner as to restore mined land to its previous productivity, and in some instances, better productivity. The tours also provided opportunities for introduction and exchange of new technologies and methods of reclamation for the industry. Tours were scaled down in 1967 and are now held only every several years to acquaint new Board members with the mining and reclamation process.

While the stated statutory function of the Board has remained constant from its inception, namely, to conduct administrative appeals and render decisions thereon, changes in the law have greatly affected its operation. In 1972, the Board's jurisdiction was expanded as provided in Section 1513.13, Ohio Revised Code. There were more enforcement actions by the Chief and an accompanying increase in appeals. The Section of Hearing and Appeals of the Division of Reclamation would hold hearings on various enforcement actions of the Chief, and the decisions of this Section were appealable to the Board. Another change in the law effective 18 March 1983 greatly expanded the Board's activities when the Board was granted "exclusive original jurisdiction" over most decisions of the Chief. This required the Board to hear these cases directly, and the number of cases increased dramatically. During the period 1983 through 1989, the Board has heard an average of almost 250 cases annually. Office of the Reclamation Board of Review is located at 1855 Fountain Square Court, Building H, Columbus, Ohio 43224. In 1990, the Board and staff numbers ten.

ABANDONED MINED LANDS PROGRAM

Ohio faces a multitude of environmental and public safety problems as a result of its long history of coal mining. During the period of unregulated coal mining and under the

Figure 12.19. Abandoned mines that have had no or little reclamation, such as this site, create public safety problems and environmental problems. The Abandoned Mined Lands Section has responsibility to identify and correct these problems using funds approved by the Board on Unreclaimed Strip Mined Lands. Division of Reclamation file photo.

early versions of Ohio's mining laws, surface and underground mining took place with little regard for the long-term effects of these activities on Ohio's land and water resources or on the safety of its citizens. As a result, a wide variety of problems exist in Ohio's coal mining region which are directly attributable to past mining efforts. These problems are known as "Abandoned Mined Lands" (AML) and fall into two general categories: public safety problems and environmental problems.

Public safety problems include sites with a high potential for personal injury and property damage. These sites include open mine shafts, mine subsidence, horizontal mine entries, dangerous structures or mining equipment, landslides, flooding from stream sedimentation, and severely polluted mine drainage affecting public water supplies. Environmental problems are considered to be those sites affecting the long-term health of Ohio's citizens or decreasing the quality or usefulness of Ohio's land and water resources. Stream pollution, severely eroding land (Fig. 12.19), disrupted land use, and decreased land productivity are examples of environmental problems.

As these problems from past mining became apparent to an increasingly environmentally conscious public, later versions of Ohio mining laws and the federal SMCRA recognized the AML problem to be an issue separate from the enforcement of current mining laws. It was realized that, in mined areas unlikely to be reaffected by future mining, these AML problems were not self-correcting and would require vigorous and costly remedial action. In anticipation of these corrective projects, the 1972 Ohio Mining Law contained a four-cents per ton coal severance tax to be used for AML reclamation. The Board on Unreclaimed Strip Mined Lands (BUSML) was also created to study Ohio's AML problem. A 1975 revision of the law created the Unreclaimed Land Special Account to receive the severance tax funds. In 1977, the AML Section was created within the Division of Reclamation with the responsibility to identify and correct AML problems using funds approved by BUSML.

SMCRA also contained a similar provision for abandoned mined lands and levied a 35-cents per ton severance tax on surface-mined coal and a 15-cents per ton tax on underground-mined coal. Distribution of the revenues from these taxes for AML reclamation was made the responsibility of OSMRE. When Ohio's regulatory program achieved primacy, the Division of Reclamation's AML program became responsible for both State and federally funded AML projects.

Today, the AML Section uses State money, with approval of BUSML, to reclaim AML sites mined prior to 1972. Federal money is used with approval of BUSML and OSMRE to reclaim such sites mined prior to 1977. Approximately 1000 acres are reclaimed by the AML Section each year, and more than $90 million in federal funds will be expended for reclamation in Ohio through 1992. The Ohio AML program has accomplished a great deal since its inception. Nearly $69 million has been expended on 712 project sites to reclaim more than 11,775 acres of abandoned mined lands (see Plates 12 and 13).

Despite this steady progress in correcting AML problems, the number of known, eligible AML sites in Ohio far exceeds the Division's corrective capability. Each eligible problem site is therefore examined by BUSML and OSMRE to determine urgency of the need for reclamation and severity of the existing problems. Among the factors considered in making funding decisions are the size and scope of the proposed work, the severity of AML problems at the site in comparison with other sites statewide, and the degree to which the project work will benefit local residents, communities, and the project sites.

Two interesting reclamation alternatives under the State-funded portion of the program are reclamation for economically disadvantaged communities and cost-share reclamation. The first alternative allows up to 20 percent of the money credited each year to the Unreclaimed Lands Special Account to be used to provide grants to political subdivisions for the reclamation of mined sites for commercial, industrial, or recreational development in communities that have been weakened economically by the effects of past mining. The second alternative allows reclamation projects authorized by BUSML to be accomplished, not through the normal competitive bidding process, but through cost-share

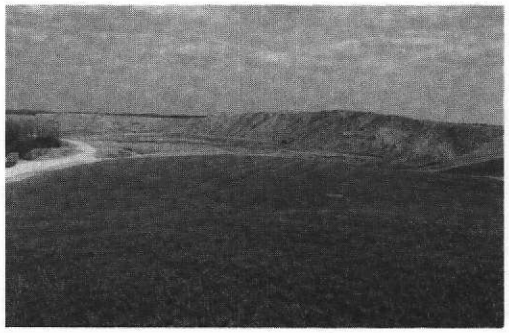

Figure 12.20. This limestone mine in Muskingum County demonstrates reclamation in accordance with regulations of the Industrial Minerals Regulatory Program. Division of Reclamation file photo, 21 April 1983.

grants to the landowner of the problem site or the operators of active coal mines adjacent to the problem site. This arrangement can greatly reduce reclamation costs.

INDUSTRIAL MINERALS REGULATORY PROGRAM

In 1973, after passage of the revised coal statutes, the industrial minerals industry soon realized that the legislative thrust of the environmental community, the General Assembly, and the people of Ohio was toward tougher, more strict regulation of the total mining industry. As there were no laws governing industrial minerals mining, efforts were made by both industry and government to formulate fair and workable legislation to regulate mining and require reclamation standards to be set. In 1975, the Ohio Surface Mine Law (ORC Chapter 1514) was enacted. This law regulates the mining of all minerals and incidental coal which are excavated from the surface of the earth in Ohio. Minerals included under the law are sand and gravel, sand, sandstone, clay, shale, limestone (Fig. 12.20), dolomite, gypsum, and any other material which has a commercial value.

Surface mine operators are required to obtain a permit which is viable for a ten-year period and is renewable. The permit requires identification of the operator, how the area will be mined, what environmental protections will be used, and how the area will be reclaimed. The cost of administering the industrial minerals program is funded through fees, both filing and acreage, and a severance tax.

Industrial minerals mining occurs in all 88 counties in Ohio. District offices and field staff are located strategically around the state to provide the best coverage of the industry and service to the public. The industrial minerals law can be compared to the 1965 coal legislation in that it requires basic protection and acceptable land reclamation. Although highwalls may remain as part of the final land configuration, these features must be stabilized. Grading standards are sufficiently flexible to allow for many types of land use beneficial not only to the people of Ohio but also to its environment. Revegetation of areas is designed to supplement and complement the intended land uses.

The immediate future of this program is bright. Although the program has had some major funding problems, a revision of the statue in 1989 provided for an additional one-cent per ton severance tax which will provide for adequate staffing levels, more consistent regulation, better protection of the environment, and improved implementation of an industrial minerals abandoned mined lands program.

SUMMARY

The Division of Reclamation during its 41 years has had nine Chiefs. Personnel has increased from two in the Division's predecessor in 1947 to 198 in 1990. The regulatory agency has functioned under the leadership of the Department of Industrial Relations, the Department of Agriculture, and ODNR. Mine operators' bond coverage has fluctuated from $100 per acre in 1947, to variable rates in 1972 that were determined by the Chief, to $2500 per acre in more recent years. The requirements for grading of spoil banks have progressed from simply covering the face of the coal seam to backfilling completely to original contour, with restoration of topsoil and vegetation. Revegetation requirements were fulfilled under early statutes until 1972 by planting trees on essentially ungraded spoil banks. The 1972 law made it economically favorable to plant grasses and legumes, due to the superior erosion control they provide.

Throughout this period, operators of both large and small mines have come and gone, leaving their mark on Ohio's landscape. Some of the original licensed operators are still mining coal and have survived both changes in the reclamation laws and economic swings in the coal market. With the laws and programs now in effect, Ohio is recovering from its history of inadequate reclamation. Under existing statutes, it is possible for an operator to have a profitable enterprise and at the same time to eliminate sources of pollution and to restore the disturbed land to productivity.