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Reclamation of Strip Mine Spoils

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Notes

RECLAMATION OF STRIP MINE SPOILS

For the past twenty-five years concern for the destructive effects of strip mining[1] for coal has been mounting to the extent that the President has contemplated federal regulation.[2] This note examines the causes of this concern and the costs and benefits of reclaiming[3] the spoil banks.[4] and concludes that reclamation (1) is necessary to certain public interests and (2) may be very profitable to the strip miners. The purpose of the note is to explain various legal methods and devices which Kentucky and other states have used or could use to insure that all spoil banks will be reclaimed. Every point considered is one of controversy, but an attempt has been made to treat each as objectively as possible without slighting its significance.

I. Economic Importance of the Strip Mining Industry

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[1] Strip mining consists of removal of the overburden, the 40 to 100 feet of earth above the top surface of the coal seam, by a large power shovel or draglines followed by the removal of the 3½ to 8 foot coal seam by small shovels. The procedure is very similar to plowing a field, for after the first cut has been made and the coal thus exposed has been removed, the overburden from succeeding cuts is piled in the trench left by the immediately preceding cut. The resulting field of parallel ridges are called spoil piles or spoil banks. Operations follow the bed of coal until the ratio of the overburden to coal is so high that production is uneconomical. A second lower seam of coal may be exposed by removal of the parting between the seams. The last cut, 50 to 80 feet wide, remains open to be filled with water.

The preceding paragraph describes the common type of strip mining—trench stripping. Since World War II, two specialized types of strip mining have become important. Contour stripping has developed in the Appalachian coal field and in the hillier regions of other fields. Excavation follows the coal outcroppings around the hillside. Due to the steep grade of the overburden usually only one cut is economical but other cuts may be possible. Multipule contour stripping occurs where seams at different elevation are exposed. Auger mining employs augers to remove coal from the exposed seam along the highwall where the overburden is too thick to strip. Single or twin augers up to 60 inches in diameter now "drill" the coal out from 80 to 220 feet back under the highwall. Auger mining, independent of normal stripping operations, may be carried out by simply exposing a vertical side of a seam on a hillside.

[2] Bingham, *Kennedy's Broad Outdoors Proposal Is Step to U.S. Strip Mining Control,* The Courier-Journal (Louisville) March 2, 1962, p. 1 c. 2; Bingham, *Udall Seeks Strip-Mine Investigation,* The Courier-Journal (Louisville) April 12, 1962, p. 1, c. 7; Bingham, *Udall Asks Reclamation Study,* The Courier Journal (Louisville) May 5, 1962, §2, p. 1; Coudill, *The Rape of the Appalachians,* 209 Atlantic Monthly 37 (April 1962).

[3] Reclamation simply means reconditioning or restoring the strip land to a contour and a vegetative cover sufficient enough to allow the forces of nature to restore the land to some form of productivity. Reclamation also includes removing any dangerous conditions whether their removal increases productivity or not.

[4] Spoil banks are described in *supra* note 1.

A. *At the Present*

Concern for the destructive effects of strip mining has been amplified by the continuous expansion of this industry. For one hundred years[5] strip mining of bituminous coal has become increasingly more important to the sagging coal industry,[6] and to the economies of the twenty-six states in which it is practiced. It has been generally confined to Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia, which together produce 85% of all coal stripped in the United States.[7] Since 1940 national production from stripping has increased 184% while underground mining production has fallen 32%.[8] In 1960 strip mining produced 29.5% of the national tonnage,[9] auger mining,[10] 1.9%.[11] These percentages in Kentucky, which produced 16% of the national total,[12] were 29.4% and 4.1%, respectively.[13] As employment in the coal industry as a whole continued to decrease (6%),[14] in 1960 strip mines used 5,348,000 man-days, including 544,100 man-days in Kentucky.[15] Auger mining totals had increased to 255,000 and 90,000, respectively.[16] These figures are put in proper context when considered with the average strip mine employee's hourly wage of $3.24[17] and the $500 million f.o.b. mine value of the production of the nation's 1,600 strip mines. Another half-billion dollars were spent as revenue to rail and barge lines for mov-

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[5] Strip mining was of no importance until 1914 but "knob" or "channel" coal was mined near Cumberland Lake, Kentucky, about 1827. These early operations used picks, shovels, and slip-scrapers drawn by mules to remove the thin overburden. See Northern Pacific Ry. Co. v. Soderbery, 188 U.S. 526 (1903); Burdick v. Dillon, 144 Fed. 737 (1st Cir. 1906); Petition for Rehearing for Appellant, pp. 21-24, Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956); Doerr & Guernsey, Man as a Geomorphological Agent: the Example of Coal Mining, 46 Annals of the Assoc. of American Geographers 202 (June 1956).

[6] In 1960 the United States remained the world's second largest coal producer by producing 26% of the bituminous coal, but her total production (415,512,000 tons) was off the 1947 level (630,623,000 tons). U.S. Dep't of Interior, 2 Minerals Yearbook: Fuels 1960 [Hereinafter referred to as 1960 Minerals Yearbook] at 4, 31, 51, 52, 144.

[7] 104 million of 122 million tons produced. 1960 Minerals Yearbook 91-95.

[8] *Id.* at 82, 83 and graph at 68.

[9] *Ibid.*

[10] "Auger mining" is described in *supra* note 1.

[11] 1960 Minerals Yearbook 82, 83.

[12] *Id.* at 67.

[13] *Ibid.* Kentucky produces more coal than any state except West Virginia which produces 28.6% of the nation's output. Kentucky's 4.1% by augering is the highest. Kentucky has the most active mines. *Id.* at 61.

[14] *Id.* at 43, 66. In the past 20 years productivity has more than doubled and the number of employees has declined more than 20%. Underground mine man-days have dropped to 26,781,000 in the nation and 4,189,000 in Kentucky. *Id.* at 70.

[15] *Id.* at 93-95.

[16] *Id.* at 96-97.

[17] National Coal Ass'n, 1960 Bituminous Coal Facts 119, as acquired from the U.S. Bureau of Labor Statistics.

ing the coal to market.[18] Kentucky's average value per ton for its 1960 production of 19,700,000 tons of stripped coal was $3.33 f.o.b. mine and $3.55 f.o.b. mine for its 2,700,000 tons of augered coal.[19] It has been estimated that an acre of stripped Kentucky coal has an average market value of $35,000.[20]

The acceleration of strip mining was caused by the war-time demand for fuel, the continuous development of giant earth-moving machines,[21] cut-throat competition from other fuels,[22] the rising labor and depletion of coal reserves suitable for underground mining. Of these, the second has been and continues to be the most influential. However, the more important class of factors has been the inherent costs,[23] the relative decline of rural land values in the coal fields,[24]

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[18] McCurdy, *Strip Spotlight—1961*, 25 Mechanization 41 (July 1961) from preliminary U.S. Bureau of Mines figures.

[19] 1960 Mineral Yearbook 92, 96, 135.

[20] Letter from John M. Crowl, Executive Director of the Kentucky Reclamation Association, Earlington, Kentucky, to the author, March 28, 1961.

[21] The largest land-based mobile machines in the world today are the giant stripping shovels at some midwestern mines. The largest is under construction in Muhlenberg County, Ky. The development of larger and longer augers, the increased dirt moving capacity and size of stripping shovels, draglines, bulldozers, and trucks, along with the development of more powerful and efficient diesel and electric engines have been the most important. Not only has the production rate been accellerated, but these developments have made possible new mining procedures thereby lowering the minimum profitable coal-to-overburden ratio 1 to 25 and above. At one time a 1 to 10 ratio was considered the economic limit. See supra note 1. See, *e.g.*, A Half Century in Stripping and the Next 10 Years, 66 Coal Age 180 (Oct. 1961); The Economics of Large Stripping Equipment: Shovels and Draglines, 45 Mining Congress J. 58 (Sept. 1958); Strip Mining Gets a 2100 ton Helper, Business Wk. 146 (June 27, 1959); Stewart, Strip Mining, 47 Mining Congress J. 58 (Feb. 1961); The Strip-Mining Guide Book, 63 Coal Age 100, 117 (Mid-July, 1958); Karnap, Highwall Augering with a Twin Auger, 45 Mining Congress J. 69 (Aug. 1959); Stripping for Profit, 65 Coal Age 267 (July, 1960); Gilbert, Two Seam Stripping, 44 Mining Congress J. 27 (May, 1958); Big Bulldozer Spearheads Low Cost Stripping, 64 Coal Age 96 (Nov. 1959); Two Seam Stripping at Vogue Mine, Madisonville, Ky., 65 Coal Age 76 (Oct. 1959); Peabody Orders Record Breaking Stripping Shovel for Kentucky Mine, 46 Mining Congress J. 83 (April 1960) (the shovel is 20 stories high and has a bucket holding 115 cubic yards). Radar and closed-circuit television are being used to increase the shovel operator's efficiency.

[22] Although consumption of energy has increased steadily since 1920, the proportion supplied by bituminous coal and lignite has decreased consistently as a result of serious competition from oil and gas. Of total energy consumed in 1960, bituminous coal and lignite furnished 22%; anthracite, 1%; oil, 43%; gas, 30%; and water power, 4%. 1960 Minerals Yearbook 44.

[23] As of April, 1960, bituminous workers averaged more per hour ($3.28) than those in steel ($3.10), the automobile industry ($2.75), chemicals ($2.48), all manufacturing ($2.28), and textiles ($1.16). Nat'l Coal Ass'n, 1960 Bituminous Coal Facts 118, as acquired from U.S. Bureau of Labor Statistics.

[24] Land for stripping is being bought in the Western Kentucky coal field for approximately $25-$100/acre vs. the average value/acre of farm real estate in the following stripping states: Illinois ($260), Indiana ($224), Ohio ($219), Pennsylvania ($162), Maryland ($202), Kentucky ($105), and West Virginia ($78). U.S. Dep't of Agriculture, 1958 Land Yearbook 189, 197, 198; See Ky. Legislative Research Comm'n, [hereinafter referred to as LRC] Strip Mining in Kentucky 28 (Pub. No. 5, 1949).

advantages which strip mining has over underground mining. For example, the output in tons per strip miner per day since 1923 has been more than double[25] that for an underground miner; the average cost per ton f.o.b. mine has progressively decreased to about one-third lower than underground coal,[26] 80-100% of the coal can be recovered as compared with 40-60%[27] and the injury rate is much lower.[28] Auger mining's 3,899% increase in production since 1951 is primarily due to the fact that this method produces the most tons per miner per day and allows the lowest price f.o.b. mine.[29]

B. *In the Future*

So long as coal is marketable the importance of strip mining will probably increase since the factors, *supra,* which have lead to its growth are still in its favor. Furthermore, their net effect is to continually expand the potential area of economical stripping by raising the maximum profitable overburden-to-coal ratio.[30] Improved navigation of the tributaries of the Ohio River would make strip mining profitable in more areas by reducing the cost of transportation to market.[31] The economic future of Kentucky strip mining has been improved by the increased demand for stripped coal for the steam turbines of the T.V.A. and other electrical utilities, who are the biggest buyers of this coal. By 1975 this market is expected to double in size.[32]

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[25] In 1914 the comparision favorable to strip mining was 3.71 to 5.06; in 1941, 4.83 to 15.59; and in 1960, 10.64 to 22.93. 1960 Minerals Yearbook 82, 83.

[26] In 1918, stripped coal became cheaper and has steadily become more so; in 1960 stripped coal sold for $3.74/ton and underground sold for $5.14/ton. *Id.* at 83.

[27] LRC, Strip Mining in Kentucky 14 (Research Pub. No. 5, 1949); Miller, Strip Mining and Land Utilization in Western Pennsylvania, 69 Scientific Monthly 94 (Aug., 1949). Stripping utilizes other coal which could not be reached by shaft mines where the overburden is too shallow or too weak to give roof support. This type of coal, which is called "channel" or "knob" coal, was the first stripped. See *supra* note 5.

[28] In 1957 strip mining's favorable comparison was .52 vs. 1.27 fatal injuries per million man-hours and 24.79 vs. 46.59 non-fatal injuries. Nat'l Coal Ass'n, 1960 Bituminous Coal Facts 121, as acquired from Accident Analysis Branch, U.S. Bureau of Mines.

[29] 31.36 tons/miner/day and $3.74/ton as compared with underground and stripping figures given in *supra* notes 25 and 26. In 1960, auger miners in Western Kentucky averaged 51.24 tons/day/miner. 1960 Minerals Yearbook 82, 83, 95-7.

[30] Larger machines (see *supra* note 21) have made it possible to strip as much as 25 ft. of overburden (see *supra* note 1) to 1 ft. of coal. 10 to 1 used to be the maximum ratio.

[31] Muhlenberg and Ohio counties now ship much coal on the Green River in Western Kentucky but improved navigation of the upper part of the river would make stripping more profitable in Butler and Edmonson counties. Various groups have been pushing development of upper Green River. See Courier Journal (Louisville) March 31, 1962, §2, p. 1, c. 1; Skinner, *Improved Navigation Looms as a Key to Betterment of Entire Area,* Rural Ky. Mag., at 166 (Feb. 1961).

[32] See 1960 Mineral Yearbook 133; 47 Mining Congress J. 58 (Feb. 1961)

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The Kentucky Court of Appeals has improved the future of strip mining by its interpretations of the "broad-form" mineral deed. Near the turn of the century, a large percentage of the coal rights in Kentucky were conveyed to large land companies[33] under ambiguous, all-inclusive severance deeds. The two important characteristics of these mineral grants[34] were: (1) the grantee was given the right to use the surface "in any and every manner that may be deemed necessary or convenient for mining," and (2) the grantor made a complete waiver of damages to the surface caused by the enjoyment of the mining rights conveyed. In 1956 a question arose—could these grantees strip for coal without liability for surface damage even though modern strip mining was non-existent when the original parties drew the deed? *Buchanan v. Watson*[35] held that the grantee could strip without liability unless he exercised this power "oppressively, arbitrarily, wantonly or maliciously."[36] The court recognized that the original parties had not contemplated the strip method. Intent is generally considered a controlling factor in determining what mining methods are permissible under an ambiguous deed.[37] Nevertheless, stripping was found to be permissible on the grounds that (1) since this was the only feasible and economical way to mine this coal, to deny its employment would defeat the principal purpose of the deed,

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and Bradbury, *Peabody Success Story*, 25 Mechanization 36 (July 1961). Peabody sold 22 million tons to electricals in 1960, and has acquired long-term contracts ranging from 5 to 27 years. Largest of these is the TVA contract for 65 million tons to be delivered over 17 years from a new strip mine at Paradise, (Muhlenberg County) Kentucky. This mine is so close to the new TVA super-power generating plant that the coal will be delivered unwashed straight from the pits.

[33] Seven land companies own about 95% of the subsurface mineral in Letcher County under the long deed which was commonly used by the early speculators. Luigart, *Strip Mining: Threat to East Kentucky?* The Courier-Journal (Louisville), Dec. 18, 1960, §4, p. 1. Also see the introductions of the four briefs, amicus curiae, Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956). Individual speculators bought most of the original severance deeds, lost money and then organized these land companies to preserve their investments.

[34] See examples of these deeds written in 1903 and quoted in the *Buchanan* opinion, 290 S.W.2d 40 (Ky. 1956); Blue Diamond Coal Co. v. Neace, 337 S.W.2d 725 (Ky. 1960).

[35] 290 S.W.2d 40 (Ky. 1956). (See another discussion of this opinion, *infra* pages 557-59.)

[36] *Id.* at 43.

[37] See Kalberer v. Grassham, 282 Ky. 430, 138 S.W.2d 940 (1940); Brown v. Crozer Coal & Land Co., 107 S.E.2d 777, 786 (W. Va. 1959); Annot., 1 A.L.R.2d 787 (1948). However, where the right to strip mine has been expressly granted to or reserved for the owner of the mineral estate, "there seems to be complete agreement," that the surface owner cannot prevent strip mining operations, "even though the public interest may seem to be adversely affected. Comment, 13 Wash & Lee L.J. 76 (1956) which cites Sherrill v. Erwin, 31 Tenn. App. 663, 220 S.W.2d 878 (1949); Tokas v. J. J. Arnold Co., 122 W. Va. 613, 11 S.E.2d 759 (1940); Donley, *Coal Mining Rights and Privileges in West Virginia*, 52 W. Va. L. Rev. 32, 54 (1949).

(2) ambiguity in a deed is always construed strongly against the grantor, and (3) the all-inclusiveness of the grant plus the waiver of surface damages created a dominant estate in the grantee. A unanimous court concluded:

> The [validity of a waiver of damages] has become so firmly established that it is a rule of property law governing the rights under many mineral deeds covering much acreage in Eastern Kentucky. *To disturb this rule now would create great confusion and much hardship in a segment of an industry that can ill-afford such a blow.* (Emphasis added.)[38]

Since the validity of waivers was not contested, this conclusion evades the primary question—what did the original parties intend to waive? However, it does indicate the real basis of the decision—economic policy considerations. Prior to rehearing the court had upheld the right to strip, but imposed liability for resulting surface damage.[39] The strip miner's petition for rehearing was supported by well-written briefs, amicus curiae, from five holding companies claiming as many as 120,000 acres of coal each under this type deed.[40] The court was noticably influenced by the presentation of the precise facts in one of these briefs; the facts were such that strip mining interests could not have had a better "test" case in which to present their "hardship" argument. In short, the brief demonstrated how stripping the 1.5 acres, an investment of $5.61, would bring only a $161 net profit to the holding company for a 53-year investment but would create "a new wealth" of $30,000 in coal which would be worth $90,000 at its northern markets.[41] Contrary to the implication of the court's conclusion, *Buchanan* helped the holding companies more than the "industry."

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[38] Buchanan v. Watson, 290 S.W.2d 40, 43-44 (Ky. 1956) (See another discussion of this opinion, *infra* pages 557-59.)

[39] First Opinion of the Court of Appeals in Buchanan v. Watson, by Comm'r Clay (Sept. 30, 1955).

[40] Briefs as Amicus Curiae for Ky. River Coal Corp. (120,000 acres), Va. Iron, Coal & Coke Co., Hazard Coal Corp., Almar Coal Corp. (many thousands of acres) and Midok Corp., Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956).

[41] The dispute concerned 1.5 acres of "knob coal" lying around the top of a mountain in Eastern Kentucky. This type of coal could be mined only by stripping because of the shallowness of the overburden. In 1903 the minerals had been severed for $1/acre, while the surface owner had purchased his estate in 20 acres in 1943 for a recital of $3.75/acre. "The friend of the court" computed that, at 6% per annum, the mineral grantee had $438.77 plus taxes invested in the 1.5 acres of coal as compared to the surface owner's $5.61 plus taxes invested in the same 1.5 acres. The grantee expected to receive only $600 in royalities or $161.33 net profits for a 53-year speculative investment. However, the clincher was:

> By the mining of this 6,000 tons of coal there will be created a new wealth of at least $30,000 represented in the price paid for the coal plus many thousands of dollars more which will be paid in the form of freight and other services. This coal in Mason City, Iowa, one of the natural markets for it, would retail for more than $15 per ton. Brief, Amicus Curiae, Va. Iron, Coal & Coke Co., Hazard Coal Corp., Almar Coal Corp., p. 314, Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956).

The real stimuli to the "industry" came in 1960 when the *Buchanan* immunity was extended to damages to surface and minor improvements caused by auger mining even where underground mining was feasible.[42] But the same opinion is expressly limited to "cases where the mineral deed expressly confers upon the *grantee* the right to use the surface in any manner that may be deemed necessary and convenient" and contains a broad waiver.[43] Within these limits, a Kentucky surface owner might recover against a strip miner claiming under a mineral reservation deed, especially if it includes no express waiver to surface damages.[44] The court, however, has given no other indication that it might make even this exception to its policy of encouraging the stripping industry. Rather, the *Buchanan* doctrine is constantly affirmed in broad language.[45] For example, the court recently said:

> This [doctrine] resulted from the orderly development of surface use brought about by changing conditions over which neither party had control. To keep in step with progress, the rights of parties must be analyzed in light of present day conditions.[46]

Courts of no other state have interpreted these broad deeds to so enhance the future of the stripping industry. Only a lower Ohio court[47] has indicated approval of the *Buchanan* philosophy that preservation of the intent of the original parties and conservation policies are subordinate to the welfare of the stripping industry. Colorado has allowed strip mining where not contemplated by the original parties, but only if damages to the surface are paid.[48] Pennsylvania's court

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[42] Blue Diamond Coal Co. v. Neace, 337 S.W.2d 725 (Ky. 1960) (see discussion *infra* pages 558-60.)

[43] *Id.* at 727. See also Wiser Oil Co. v. Conley, 346 S.W.2d 718, 721 (Ky. 1961) (dictum).

[44] Wiser Oil Co. v. Conley, 346 S.W.2d 718, 721 (Ky. 1961) stated that the express waiver of damages was the controlling feature in *Buchanan.* The express right to use the surface as necessary to mine does not presently include the right to destroy it without waiver. Jones Coal Co. v. Mays, 225 Ky. 365, 8 S.W.2d 626 (1928); Oresta v. Romano Bros. 137 W. Va. 633, 73 S.E.2d 622 (1952). See Buck R. Co. v. Haws, 253 Ky. 203, 69 S.W.2d 333 (1934); Horseshoe Coal Co. v. Fields, 207 Ky. 172, 268 S.W. 1078 (1925); Comment, 58 W. Va. L. Rev. 174 (1956). North-East Coal Co. v. Hayes, 244 Ky. 639, 51 S.W.2d 960 (1932), allowed surface owner to recover against a deep miner claiming under a reservation deed like the one in *Buchanan* except it did not contain an express waiver.

[45] Ritchie v. Midland Mining Co., 347 S.W.2d 548 (Ky. 1961) (J. Palmore summarily refuses to reconsider overruling *Buchanan* and instead says "only the legislature can provide a different answer." *Id.* at 548; Kodak Coal Co. v. Smith, 338 S.W.2d 699 (Ky. 1960). See discussion *infra* pages 558-60.

[46] Westphal v. Ky. Util. Co., 343 S.W.2d 367, 371 (Ky. 1961).

[47] Franklin v. Callicoat, 53 Ohio Op. 240, 119 N.E.2d 688 (Comm. Pleas 1954) held *contra* to *Buchanan* but indicated that under a broader waiver it would allow strip mining even though not contemplated by the original grantor and grantee.

[48] Barker v. Mintz, 73 Colo. 262, 215 Pac. 534 (1923), denied an implication

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has permitted strip mining without liability under mineral *reservations*, similar to the *grant* in *Buchanan*, without regard to intent of the original parties.[49] But this permission is now granted only where the land uninhabited, unimproved or mountainous because:

> [I]f such[stripping] rights were intended and reserved, then every public and private building in the coal region could be demolished, the surface and the entire area leveled in ruin and desolation.[50]

Arkansas held that even though the original parties had contemplated strip mining, liability will be imposed for surface damage unless there is an express waiver.[51] This court said to impose the *Buchanan* interpretation "would make the conveyance of the surface as a mere nullity."[52] Since 1947, when it held contra to *Buchanan*, West Virginia has strictly construed all instruments upon which claims to strip mine are based.[53]

II. Destructive Effects of Strip Mining

In spite of its economic benefits, strip mining has six destructive effects which have caused public opinion to support reclamation of spoil banks. Since the aggregate destructive effect of these six naturally is dependent upon the total number of acres disturbed by strip mining, this total is discussed separately.

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of right to strip coal even under wild pasture land but refused surface owner's request for an injunction against strip mining. Strip mining was allowed if the surface owner was compensated in order to give both owners the most benefit with the least harm.

[49] Commonwealth v. Fitzmartin, 376 Pa. 390, 102 A.2d 893 (1954) (concerning 1920 mineral reservations); Commonwealth v. Fisher, 364 Pa. 422, 72 A.2d 568 (1950) (concerning a 1855 mineral reservation). See Note, 58 W. Va. L. Rev. 174, 181 (1955); Note, 13 Wash & Lee L. Rev. 76, 80-82 (1956).

[50] Wilkes-Barre Township School Dist. v. Corgan, 403 Pa. 383, 170 A.2d 97, 100 (1961) distinguished the earlier Pennsylvania cases but indicated that intent of original parties should be given primary consideration. See also Rochez Bros. Inc. v. Duricka, 374 Pa. 262, 97 A.2d 825 (1953).

[51] Benton v. U.S. Manganese Co., 313 S.W.2d 839 (Ark. 1958) (manganese rather than coal).

[52] *Id.* at 842.

[53] United States v. Polino, 131 F. Supp. 772 (N.D. W. Va. 1955); Brown v. Crozer Coal & Land Co., 107 S.E.2d 777 (W. Va. 1959); Oresta v. Romano Bros., 137 W. Va. 633, 73 S.E.2d 622 (1952); West Virginia-Pittsburgh Coal Co. v. Strong, 129 W. Va. 832, 42 S.E.2d 46 (1947); 58 W. Va. L. Rev. 174 (1955).

In the *Strong* case the court found that indications in the mineral grant were sufficient to imply an intent to preserve the surface even though the grant conveyed "all" coal which under West Virginia law was *per se* a waiver of the right to surface support. Comment, 13 Wash & Lee L. Rev. 76, 83 n. 28 (1956), citing Simmers v. Star Coal & Coke Co., 113 W. Va. 309, 167 S.E. 737 (1933) (reservation); Griffin v. Fairmount Coal Co., 59 W. Va. 480, 53 S.E. 24 (1905); Dowley, *Coal Mining Rights and Privileges in West Virginia*, 52 W. Va. L. Rev. 32, 50 (1949). The basis of the strict construction was said to be compelled by a strong legislative policy (see *Strong* and cases following, *supra*) which the Kentucky court has constantly avoided recognizing.

A. *Public Interests Harmed*

(1) *Aesthetic.* Waste land follows the stripping shovel. In short, the entire countryside for miles may be turned upside down. Rolling land is left looking like plowed fields with furrows 20 to 50 feet deep and slopes of 10 to 60 degrees. The furrows are capped with limestone and sandstone boulders mixed with shale, gravel, clay, and slate. The former top soil is 10 to 50 feet below the surface.

Contour, strip and auger mining[54] dumps tons of overburden down hillsides thereby destroying timber, filling streams, and covering fertile valley land. The natural beauty of the mountains and hills is further marred by the horizontal gully which is left ringing their slopes.

(2) *Agriculture.* Stripping land permanently withdraws it from agricultural uses unless it is reclaimed. The legislatures of Kentucky and West Virginia found and stated in their statutes that strip mining without reclamation destroys the agricultural value of land; four other legislatures have implied the same.[55] Withdrawal from agricultural use is generally accepted as detrimental in spite of the following factors: the federal soil bank program encourages reduction in cropland,[56] the land stripped is generally submarginal, and the value of the coal stripped equals the value of 200 to 500 corn crops grown on the same land.[57]

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[54] "Contour, strip and auger" mining is defined *supra* note 1.

[55] See, LRC, Strip Mining (Research Pub. No. 10, 1954); LRC, Strip Mining in Kentucky (Research Pub. No. 5, 1949); "Report of the Strip Mining Study Comm'n to the Governor and 97th General Assembly of the State of Ohio" (Jan. 15, 1947). See also the public policy statements of the reclamation statutes of seven states cited *infra* note 138.

Rochez Bros. v. Duricka, 374 Pa. 262, 97 A.2d 825, 827 (1953), said, "But strip mining drives the farmer from his fields as effectively as a tornado. And the damage done is not restricted to the year in which the mining occurs."

A 1953 opinion of the Magoffin Circuit Court of Magoffin County in Eastern Kentucky said: "After viewing mining operations in the vicinity of the defendant's property and after viewing defendant's property, the court is of the opinion that surface and timber above the seam being stripped would be completely destroyed for agricultural purposes or for growing timber by the strip and augur [*sic*] method of mining." Brief for Appellee, pp. 2-3, Buchanan v.. Watson, 290 S.W.2d 40 (Ky. 1956).

The most famous study made of Kentucky spoil banks found that in 1948, 80% of the spoils were without vegetation, that only 46% of the spoils over 5 years old were vegetated, and that about 15% were so toxic that only ½ of their surface was plantable. Thirty to forty-years old spoil banks around Beaver Dam and McHenry in Western Kentucky remain barren today. Merz, Character and Extent of Land Stripped for Coal in Kentucky (Ky. Exper. Sta. Circular No. 66 1949); Guernsey, Reclaiming Strip Mined Lands by Tree Planting, Ky. Strip Mining and Reclamation Comm'n Pub. (1955).

The only opinion found which claimed that nature would reclaim spoil banks without any help by conservation practices was Schoewe, *Land Reclamation,* 46 Mining Congress J. 92 (Sept. 1960).

[56] The federal reserve land (soil bank) program withdraws 1.17% of the entire United States from agricultural uses until 1968 at a cost of $258,469,620. See, Schoewe, *id.* at 93.

[57] Letter from John M. Crowl, Exec. Director of Ky. Reclamation Ass'n,

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Stripping isolates much land which is not stripped, either because it contains no coal or because the overburden[58] is too high. Because of this isolation, farming is less desirable[59] and less profitable,[60] and therefore more land is withdrawn indirectly. Still more land is ruined by acid runoff.[61] Because of these factors, landowners generally now require that the strip miner buy their entire tract. Unstripped land owned by Kentucky strippers is seldom farmed with the exception of tobacco allotments.

(3) *County Revenue.* The relationship between strip mining and the property taxes of local governments is the least mentioned, the least understood, but one of the most important factors concerning strip mine regulation.[62] The confusion concerning this relationship is probably due to the lack of uniformity in county taxing practices, the discretion enjoyed by county tax officials,[63] and the fact that assessed value does not change unless the owner reports a change in value even if land is to be or has been stripped.[64]

This relationship is important because without reclamation stripping potentially could substantially reduce the tax revenues of several Kentucky counties. Kentucky counties and school districts receive nearly 95% of their tax revenue from property taxes.[65] The value of land alone represents about 25% of the aggregate tax value of all Kentucky property.[66] This percentage is probably larger in

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(Footnote continued from preceding page)
Earlington, Ky. to the author, March 28, 1961. Crowl estimates that an acre of Kentucky coal has a market value of approximately $35,000.

[58] "Overburden" is defined *supra* note 1.

[59] The objectionable features are discussed *infra* notes 82-84 and accompanying text.

[60] Farming expenses are increased by the longer distances between arable fields, by the reduction in the number of farms available for exchanging labor and equipment, and by the increased number of pests, rodents, mosquitoes and weeds.

[61] Stripping the overburden and piling it in banks frequently exposes pyritic materials which combine with water and air to produce acid on the surface of the spoils. This acid condition may gradually be weathered away in two to fifteen years, but while it remains no vegetation can grow on the spoils and much vegetation on surrounding land will be killed by acid washed from the spoils. See also *supra* note 55.

[62] See LRC, Strip Mining in Kentucky 25-31 (Research Pub. No. 5, 1949).

[63] See LRC, State General Fund Taxes 15, 124-34 (Research Pub. No. 45, 1956); LRC, The Inequality of Assessments (Research Pub. No. 1, 1949).

[64] State constitutions and statutes generally forbid assessing land for more than its fair market value and require county tax commissioners to reassess all property every four years as do Ky. Const. Sec. 72 and KRS 132.370, 132.690. But, as the text will explain, the fact remains that most stripped land retains its pre-stripped assessment.

[65] LRC, Taxation; Property Taxes 2 (Research Pub. No. 18, 1951); LRC, State-Local Fiscal Relations 33 (Research Pub. No. 31, 1952). The Ohio County real estate tax is $2.15/$100 assessed value which is divided as: $.05 to the state, $.05 to the county, $1.50 to the county schools and $.10 to the county hospital.

[66] LRC, State General Fund Taxes 54 (Research Pub. No. 45, 1956).

rural counties where the value of land improvements and machinery is less.

The relevancy of this relationship is already apparent in certain counties. Hopkins, Muhlenberg, and Ohio counties currently,[67] and have since 1947[68] produced over 77% of Kentucky's stripped coal. In these counties, 110,000 acres are now owned or leased by strip mining companies who are continually acquiring more. In Muhlenberg, stripping interests have bought or leased 70,000 acres, 23% of the total land area of the county. In this county when a stripping company procures land the assessment is placed at $14.50 per acre ($8 for the surface and $6.50 for the undeveloped coal), which appears to be below the county average. But when the land is reported as stripped, the assessment is lowered to $.75 per acre thus reducing annual tax revenue to less than $.005 per acre. Already 18,765 acres have been so listed. Hopkins now assesses its 30,000 acres listed as stripped at $5 per acre.[69] Ohio and other counties do not reduce the assessment when the land is stripped and thus prevent reduction in land tax revenue. However, this "frozen" assessment could be only temporary since the coal companies can always assert their right to have it lowered. This is true because stripping without reclamation substantially reduces the value of all elements which determine the market value of rural land.[70] Fear of public resentment may deter the stripping interests from asserting this right, but this apparently was not the case in Muhlenberg. Nor will public opinion inhibit subsequent stripping grantees, who have no interest in the stripping industry, from asking that their assessed value be lowered to market value.

In short, West Kentucky counties have no common tax policy concerning strip mine holdings, but they are in accord in that they do not increase the assessed value of land when it is converted from agriculture to stripping use even though the assessment is or could be lowered to a nominal amount after stripping.

The importance of the tax problem will become more state-wide as stripping increases in the 30 other Kentucky counties which it has entered. Since extensive studies show that stripped counties in Ohio,

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[67] 1960 Minerals Yearbook 92. This percentage will doubtlessly increase due to the Paradise Mine in Muhlenberg county, discussed *supra* note 32.

[68] LRC, Strip Mining in Kentucky 11 (Research Pub. No. 5, 1949).

[69] These figures were taken from an unpublished study made by Tom Ford, Soil Conservation Supervisor, Muhlenberg County, in 1961.

[70] See Great Northern Ry. Co. v. Weeks, 297 U.S. 135 (1936); CCH, 1 Ky. Tax Rep., ¶ 20-321.40 (1961); *supra* note 64; *infra* notes 82-84 and accompanying text.

Illinois, Indiana, and Kansas[72] have reacted very similarly to Hopkins, Muhlenberg, and Ohio, there is no reason to believe that these 30 counties will adjust any better if unassisted. Illinois, Indiana, Pennsylvania, and Maryland have given statutary expression to the tax danger imposed by unregulated stripping.[73] As early as 1942, Indiana county tax officials stated that this danger was being realized in some small tax districts "since maximum levies make it difficult or impossible to raise needed revenue for support of public services."[74]

Strip mining without reclamation not only lowers county revenue from land taxes, but also reduces population, thus further increasing the tax burden on the remaining residents. This depopulation is largely due to the decrease and isolation of farmsteads caused by extensive stripping.[75] While the nation and state have been growing, Muhlenberg, Ohio, Hopkins and the 30 other rural Kentucky counties with strip mines have lost population.[76] Stripping may be only one of several causes, but as evidence of its effect, Ohio County school bus routes have been rerouted simply because stripping has already depopulated certain areas.[77]

The threat to county revenue should not be overstated. The *current* economic benefits of strip mining[78] indirectly supplement county revenue. Certain revisions in assessment procedure would reduce the threat;[79] furthermore, the common fear that stripped land would

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[72] LRC, Strip Mining in Kentucky 26-31 (Research Pub. No. 5, 1949); Graham, The Economics of Strip Coal Mining 52-61 (U. Ill. Bull. No. 66, 1948); Moore, Agriculture and Land Use as Affected by Strip Mining of Coal in Eastern Ohio (Ohio State Univ. Dep't. of Rural Economics Bull. No. 135, Sept. 1940); Walter, Strip Coal Mining in Illinois 22, 32, 56, 62 (1942) (unpublished but on file in library of Ky. LRC).

[73] See the statutes of these states cited in *infra* note 201.

[74] Walter, *op. cit. supra* note 72, at 33.

[75] In four Indiana counties over 5,000 acres of cropland alone have been stripped and in the state over 50,000 acres of cropland. See Guernsey, *Land Use Changes Caused by Strip Coal Mining in Indiana,* 69 Indiana Academy of Science 200 (1960); Guernsey, A Study of the Economic Impact of Strip Coal Mining in Hopkins County, Kentucky, (Published by U. of Louisville, Div. of Natural Science, 1956); Shannon, *Advance of Strip Mining Dooms Muhlenberg Town,* The Courier-Journal (Louisville), May 15, 1962, §2, p. 1, c.l.; Walter, *op. cit. supra* note 72, at 10 says, "spoil piles don't make good neighbors."

[76] U.S. Dep't of Commerce, Bureau of the Census, Population 1960: Kentucky, Number of Inhabitants at 19-9, 19-10 shows a decrease in population during 1950-1960 for all 33 Kentucky counties listed as producing stripped coal in 1960 Mineral Yearbook 92. The one exception is Daviess County which has increased 23%. However it strips very little coal and 60% of its population is urban. The decrease in the other 32 counties was very substantial, except for Hopkins County which is 49% urban.

[77] Conversation with the Ohio County School Superintendent in 1961.

[78] For discussion of economic benefits, see *supra* notes 5-32 and Midland Elec. Coal Corp. v. Knox County, 1 Ill.2d 200, 115 N.E.2d 275 (1947).

[79] See, *infra* notes 295-98 and accompanying text.

become tax delinquent has not been generally realized[80] since, to the present at least, the strip miners have sold very little of it and have kept the taxes paid.[81]

(4) *Adjoining Land.* Strip mining without reclamation permanently reduces the marketability of adjoining property which is not underlain by strippable coal. The loss is caused by aesthetical and intangible factors such as disruption in neighborhood social functions, roads, schools, drainage channels, and the underground water level.[82] The unreclaimed spoils provide breeding places for mosquitoes,[83] other insects, weeds and rodents.

(5) *Safety.* The unreclaimed spoil bank is dangerous to life and property. Its enticing and easily ascendable slopes may be an attractive nuisance. Its loosely packed construction contains many "treasures" for a child and provides excellent slides, yet at the same time can slide and bury a child. The deep, water-filled pits formed among the spoils and in every last cut[84] impose an even greater danger than drowning, for coal is frequently stripped in the vicinity of underground mines in West Virginia, Pennsylvania, and Western Kentucky. Thus, miles of underground mine workings may be flooded. The exposed coal seam at the foot of the highwall constitutes a fire hazard if not covered. A few legislatures have recognized some of these dangers by requiring all abandoned strip pits to be fenced and sloped.[85]

(6) *Conservation.* The most commonly-stressed reason for reclamation is the prevention of the unreasonable waste of natural resources. Fact-finding surveys by the legislatures of Kentucky and six other states resulted in the enactment of statutes in all seven states which state that unregulated strip mining causes soil erosion and water pollution.[86] Statutes in Kentucky, Indiana, and West Virginia state that unregulated stripping increases the hazard of floods.[87] Indiana, Pennsylvania, and Maryland found birds, game and wild life

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[80] For example, less than one-half of 1% of all spoiled acres in Indiana were reported as tax delinquent in 1959. Guernsey, *supra* note 75.

[81] Stripping interests have retained stripped land because of the possibility of further exploitation of coal and other minerals and in order to keep the land out of the hands of those who would not stand to lose if the public found out that much stripped land was becoming delinquent.

[82] Evidence of the reduction of the elements which determine the value of rural land is exemplified in the text accompanying notes 54-91.

[83] LRC, Mosquito Control in Kentucky (Research Rep. No. 5, 1961).

[84] "Last cut" is defined in *supra* note 1.

[85] *E.g.*, Colo. Rev. Stat. Ann. 92-10-1 (1953); Vir. Code §18.1-73 (1950); Wyo. Stat. §30-158.3 (Supp. 1961).

[86] See the public policy provision in the introductory sections of the statutes cited in *infra* note 138. For the fact-finding surveys, see *supra* note 55.

[87] *Ibid.*

were similarly endangered.[88] All seven legislatures summarily concluded that such stripping is repugnant to the conservation of natural resources.[89] An exhaustive 1959 study by the Tennessee Dep't of Conservation and the TVA as to the effect of contour stripping confirmed these earlier surveys as to erosion and spoil bank acidity.[90] Soil, mud, silt and other material carried off bare contributes to the siltation and swamping of small s eams.[91]

The validity of these findings apparently conceded; however, the stripping process does conserve our depleting coal reserves by recovering 80%-100% of all seams mined (as compared with 40%-60% recovered by underground mining)[92] and by recovering seams which could not be mined by shaft mining. But, the same cannot be said for "strip and auger" mining in the mountains. Augers reach under the mountain for 50-200 feet around its circumference leaving coal in the center which is *lost* for it cannot be mined by any method.

B. *Acreage Effected*

The aggregate destructive effect of stripmining naturally depends upon the total number of acres disturbed. To date, no computation has been made of the acreage distributed in the 26 states in which strip mining is practiced. Conservative estimates have been given for three states; Ohio (180,000),[93] Illinois (104,000)[94] and Indiana (100,000).[95] Estimates of the number of Kentucky acres disturbed have ranged from 18,000[96] to 40,000[97] acres (.07% to .15% of the entire state).[98] Kentucky estimates are probably too conserva-

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[88] *Ibid.*

[89] *Ibid.*

[90] Tenn. Dep't of Conservation and Commerce, Conditions Resulting from Strip Mining for Coal in Tennessee (April 1960).

[91] See LRC, Mosquito Control in Kentucky 5 (Research Rep. No. 5, 1961); Luigart, *Strip Mining: Threat to East Kentucky?*, The Courier-Journal (Louisville) Dec. 18, 1960, §4, p. 1.

[92] *Supra* note 27.

[93] P. H. Struthers, 180 Strip Mine Acres; Ohio's Largest Chemical Works, 46 Ohio Ag. Exp. Farm & Home Res. 52 (July 1961).

[94] Letter from L.S. Weber, Ass't Dir. of Conservation, Mid-West Coal Producers Inst., Inc., 307 N. Mich. Ave., Chicago 1, Ill., to the author, April 10, 1961; 4,000 acres were added to cover period since.

[95] Guernsey, 69 Proceedings of the Ind. Acad. of Science for 1959 (1960). 6,000 acres were added to the original figure to cover the period since 1959.

[96] Crowl, *op. cit. supra* note 20. 3,000 acres were added to his estimate to cover the period since March, 1961.

[97] Taken from L. E. Sawyer's testimony before the mining subcommittee of the House Interior Comm. on May 4, 1962. Mr. Sawyer is the director of conservation of the Mid-West Coal Producers Inst. He testified that 31,462 acres had been disturbed in Western Kentucky. The additional acreage was added to cover disturbance in Eastern Kentucky.

[98] U.S. Dep't of Commerce, Bureau of the Census, Agriculture 1959: Kentucky, Counties, at 3, lists 25,512,320 acres of land area in Kentucky. This chart also shows that this figure has decreased 203,510 acres since 1920 due to

(Continued on next page)

tive since county tax roles list 48,700 acres which have been disturbed in only two of the 33 Kentucky counties in which stripping prevails.[99] Furthermore, the present ratio of tons produced to acres stripped indicates the number of Kentucky acres actually stripped is approximately 55,000 or .22% of the entire state.[100]

The number of acres that will be stripped in the future depends largely upon two speculative factors discussed supra—the future marketibility of stripped coal[102] and further improvement of the maximum profitable overburden to—coal ratio (presently at 25 to 1).[103] Acres disturbed will continue to be proportionate to production except to the extent that advances in mining machinery and methods allow profitable stripping of coal formerly by-passed in the spoil fields as too deep.[104]

III. Benefits and Cost of Reclamation

In summary, the strip mine industry is of vast economic importance and will probably become even more so, but its six destructive effects have caused public reaction. No state legislature has attempted to, nor could,[105] prohibit stripping; prohibition by county

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(Footnote continued from preceding page)

actual changes in land area caused by changes in the number or size of reservoirs, lakes, streams.

[99] This figure was taken from an unpublished study made by Tom Ford, *op. cit. supra* note 69, which found that 65,771 acres are listed as stripped on the tax roles of seven counties in Western Kentucky. The two counties referred to in the text are Muhlenberg and Hopkins. Ohio County, which is the third largest producer of stripped coal in the state and the eighth in the nation, was not included in these seven counties.

[100] Ky. Strip Mining and Reclamation Comm'n Pamphlet (1960) states that 4,630 acres are known to have been stripped in producing 19,600,000 tons in 1960. The Mineral Yearbooks of the Dep't of Interior for the respective years from 1914 list a total of 216,013,307 tons that have been produced by strip mining in Kentucky. This total does not include tons stripped prior to 1917 nor during 1932-35. Naturally, the present 4,225 tons-to-acres ratio is the result of numerous topographic, mechanical and human factors which have never been static, however, the ratio should be reliable enough to indicate that substantially more than 40,000 acres have been disturbed in Kentucky.

[102] See *supra* notes 30-53 and accompanying text.

[103] See *supra* note 30 and accompanying text.

[104] Much of this "by-passed" land is probably presently listed as stripped since it is scattered throughout tracts which have been extensively stripped. Therefore, stripping this land may increase production without increasing the number of additional acres actually disturbed.

[105] Pennsylvania Coal Co. v. Mahon, 260 U.S. 393 (1922), invalidated a statute forbidding the mining of coal under private dwellings, streets or cities where the right to mine had been reserved and subjacent support waived as taking property without due process. If prohibiting mining under cities without liability for surface damages is unconstitutional, apparently any prohibition of strip mining would be also. Courts have declined to find stripping to be against public policy. East Fairfield Coal Co. v. Booth, 166 Ohio St. 379, 143 N.E.2d 309, 311 (1957); West Virginia-Pittsburg Coal Co. v. Strong, 129 W. Va. 832, 42 S.E.2d 46 (1947).

and city zoning ordinances has not been very successful.[106] The more reasonable method of abolishing the six destructive effects of stripping is by reclaiming[107] the spoil banks.

A. *Selection of the Most Beneficial Use*

Much has been written about the remarkable results obtained from reclamation,[108] but selection of the most economical use remains difficult and should be the object of more scientific study.[109] When considering possible agricultural uses, characteristics of the spoil banks are primarily determinative. Their composition, texture, stability, and acidity vary greatly even within a single tract and especially among counties and states. Certain traits of the entire stripped site

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[106] Midland Elec. Coal Corp. v. Knox County, 1 Ill.2d 200, 115 N.E.2d 275 (1953) and East Fairfield Coal Co. v. Booth, 166 Ohio St. 379, 143 N.E.2d 309 (1957), respectively, invalidated a county and a township ordinance as arbitrary unreasonable use of the police power. The *Midland* opinions is an excellent coverage of all the facts and policies relevant to regulation of strip mining. However, the court reasoned from the assumption that strip mining would never cease to be of major economic importance to Knox County and that it would voluntarily reclaim the spoils. Both opinions noted that the coal was minable only by stripping, thus employing the primary reason used in the invalidation of ordinances prohibiting the removal of sand, gravel, or clay—denial of the right to develop a valuable mineral estate.

In 1961, the Illinois court limited *Midland* to county ordinances by upholding a city ordinance which prohibited strip mining primarily on the ground that stripping presents a real and imminent danger to the families with children living in close proximity. Village of Spillertown v. Prewitt, 21 Ill. 2d 228, 171 N.E.2d 582 (1961).

Argument for upholding local prohibition of stripping could be found in the courts' tendency to uphold ordinances forbidding removal of soil. But in those cases no mineral estate is involved and the more urbanized surroundings have provided grounds for placing unusual weight upon aesthetic factors. See topsoil statutes *upheld* in: Town of Billerica v. Quinn 320 Mass. 687, 71 N.E.2d 235 (1947); Town of Burlington v. Dunn, 318 Mass. 216, 61 N.E.2d 243 (1945); Krantz v. Town of Amherst, 192 Misc. 812, 80 N.Y.S.2d 182 (1948); Lizza & Sons v. Town of Hempstead, 69 N.Y.S.2d 296 (1947) *aff'd*, 272 App. Div. 921, 71 N.Y.S.2d 14 (1947); Burroughs Landscape Constr. Co. v. Town of Oyster Bay, 186 Misc. 930, 61 N.Y.S.2d 123 (1946). Miesa v. Village of Mayfield Heights, 92 Ohio App. 471, 111 N.E.2d 20 (1952), pertained to ordinances regulating rather than prohibiting removal.

See topsoil statutes *invalidated* in: North Reading v. Drinkwater, 309 Mass. 200, 34 N.E.2d 631 (1941); Harrison v. Sunny Ridge Builders, 169 Misc. 471, 7 N.Y.S.2d 521 (1938). See generally Annot., 168 A.L.R. 1188 (1947).

See also Dukeminier, *Zoning for Aesthetic Objectives: A Reappraisal*, 20 Law & Contemp. Prob. 218 (1955). Note, *Aesthetics as a Zoning Consideration*, 13 Hastings L.J. 374 (1962). But for the problem of pre-emption by state reclamation statutes, see *infra* notes 276, 277 and accompanying text.

[107] "Reclamation is defined in *supra* note 3.

[108] *Infra* notes 110-133 list only a few examples of these articles, speeches, etc. Many can be found in the mining and conservation journals.

[109] Industry and government have experimented extensively, but Kentucky's two U.S. Senators have asked Congress for $200,000 to find methods of adequately reclaiming land in the Appalachian region which has been affected by contour stripping and by strip and auger mining. See Bingham, *Strip-Land Restoring Is Pushed*, The Courier-Journal (Louisville) March 10, 1962, p. 1, c. 3; and the articles in *supra* note 2.

are considered: its size, shape, topography, watershed, and percentage of non-stripped area. Other factors considered are: adjacent land use, climate, common plant and tree growth. Kentucky spoils generally contain a large percentage of slate, sandstone, and limestone, but little loose soil and clays. The terrain is hilly even in the Western coal field; therefore, forestry has been and probably will continue as Kentucky's most common reclaimed use.[110] "Hilly" pastures, however, are rapidly increasing due to the development of new cover crops and aerial planting.[111] Spoils in the prairies of Indiana, Illinois, Kansas, and Ohio are better suited to being restored as "new" pastures or even cropland fertile enough to grow alfalfa.[112] On the other hand, orchards,[113] vineyards,[114] apiaries,[115] and poultry farms may be profitably conducted on almost any spoils.

Increased good will for the industry has been reaped where spoils have been converted to fill a need for fairgrounds,[116] wildlife preserves, parks, and water-sports facilities.[117] The possibility of further

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[110] Crowl, *Recovering Striplands in Kentucky*, 62 Coal Age 72-79 (March 1957); Crowl, Report on Reclamation of Lands Stripped by the Open Cut Method of Coal Production, submitted to the Fifth World Forestry Congress, Seattle, Washington, Aug.-Sept. 1960; Guernsey, A Study of the Economic Impact of Strip Coal Mining in Hopkins County, Kentucky (Published by U. of Louisville, Div. of Natural Science); Merz, Character and Extent of Land Stripped for Coal in Kentucky, (Ky. Exper. Sta. Cir. No. 66, 1949). Growth rates for trees on spoils vary with conditions but in general Christmas trees, posts and mine props may be produced within 5 to 15 years, small poles and pulpwood in 20 to 30 years and saw timber 30 to 45 years.

[111] See, *e.g.*, Foresman, *Strip Grazing for Prize Angus*, 60 Coal Age 74 (Sept. 1955); Foresman, *Stripped Land Rehabilitation*, Coal Mine Modernization 343-54 (1952); Meadowlark Farms Inc., *Reclamation Makes Sense Only When Restored Land Has an Economic Value*, 58 Coal Age 88 (Aug. 1953); Sall, *Strip Land Reclamation at Little Sister*, 40 Mining Congress J. 26 (Oct. 1954); Ill. Coal Strippers Ass'n, Land Use Bull. (June 6, 1958).

[112] *Ibid; Better Farms from Stripped Lands*, 57 Coal Age 100 (March 1952); *Here's How You Can Return Strip Lands to Full Fertility*, 57 Coal Age 98 (Feb. 1952); *Reclamation Project Yields a Profit*, 66 Coal Age 120 (Nov. 1961).

[113] See, *e.g.*, Ill. Coal Strippers Ass'n, Land Use Bull., pp. 16-17 (June 6, 1958).

[114] Foresman, *supra* note 111.

[115] *Ibid.*

[116] One of the first public uses of mined land is Duquoin Fairgrounds in Southern Illinois where some 400 acres of mine wasteland have been turned into an attractive fairgrounds, scene of one of the largest annual fairs in the country and now the site of the nation's most famous trotting race, the Hambletonian. See, *e.g.*, Address by Norman Kelb, President of Ayrshire Collieries Corp., Indianapolis, to the 79th Meeting of the Natural Resources Comm., Chamber of Commerce of the U.S. (Oct. 7, 1960).

[117] Kelb's address, *ibid*, describes numbers of parks and forests in Indiana and Illinois which have been created upon stripped land. In the heavily populated coal producing area of Northeastern Illinois, some 6,200 acres of stripped land have been developed for recreation. Most of the development has been by private clubs with restricted membership. The demand for membership is heavy. Total membership in 1960 was approximately 6,000. Recreation developments are found in other states, but wildlife and hunting reserves are more common.

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exploitation of oil or coal may justify retention of mineral rights, but the potential tort liability for sporting accidents has frequently induced the sale or gift of the surface to the state, municipalities, or charities.[118]

Where spoils are near urban areas, the prior-to-stripping value has been increased from 200% to 1,000% by developing industrial or home sites with frontage on lakes formed in the last cuts.[120] The sand and gravel industry—the long-time victim of zoning laws and "urban sprall"—now exploits this type of reclamation.[121] This may never be used extensively in the predominately rural Kentucky coal fields, but spoils now surround Madisonville and Greenville.

B. *Cost of Reclamation*

The stripping industry and the conservationists have been reluctant in approximating the cost of reconditioning spoil banks; however, a conservative conclusion is that it is low when compared with its benefits to the public and the individual stripper.

To say that *cost* is determined principally by the *reclaimed use selected* and by the *amount of grading required* would be correct but misleading because any two of these, to a large extent, determine the third. The extent to which grading, the highest item in any reclamation plan, is economical has been a source of controversy. Grading is always necessary when constructing cropland, pastures, orchards, roads, fire lanes, and dams. Any worthy reclamation plan requires grading to provide correct drainage, to cover exposed coal and debris, and to reduce sharp peaks, highwalls[122] and the deep ravines between the rows of spoil banks. To this extent grading increases the value and productivity of the land and reduces acidity,

(Footnote continued from preceding page)
Hunting and fishing licenses sold in the six coal producing counties of Kansas, which contain 350 spoil bank lakes, netted $114,300. Schoewe, *Land Reclamation,* 46 Mining Congress J. 69, 71 (Oct. 1960).

[118] Kelb, *ibid,* says that development of most of the public facilities in Indiana and Illinois followed such gifts by the strip miners or the surface owners.

[120] In Fulton County, Illinois, a private corporation has developed the old Truax-Traer workings into a 3,200 acre game and fish refuge containing 100 lakes, one of which covers 300 acres. By 1960 within this development, called Wee-Ma-Tuk (Indian for "many lakes in hills"), 800 building sites had been leveled from the tops of spoil banks. The homes constructed are valued from $22,000 to $30,000. Many of the sites have lake frontage which makes them ideal for sportsmen. A more modest development of this type is located near Terre Haute, Indiana. Kelb, *op. cit. supra* note 116; Article, 45 Mining Congress J. 70 (Dec., 1959).

[121] See, *e.g.,* Godfrey, *Gravel Pits are Getting New Faces,* 62 Rock Products 106 (June, 1959); National Sand and Gravel Ass'n (Wash. 5, D.C.), Case Histories Rehabilitation (1961); Parsons, *The Rewards of Land Rehabilitation,* 61 Rock Products 62 (April 1958).

[122] The "highwall" is the 60-100 foot perpendicular wall of undisturbed overburden left by the last cut.

pollution of water and soil erosion. Beyond this flexible line, grading packs the earth causing less productivity and *more* soil erosion and thus becomes uneconomical.

After the use is selected, the cost of reclamation is determined by the topography and the composition of the spoil banks. Cost figures may be given either as per ton of coal mined or as per acre reclaimed. (1) No authority has estimated the average cost of reclamation to be more than $.04/ton.[123] This expense does not appear to be substantial when compared with the $.40/ton the industry has contracted to pay the United Mine Workers Welfare Fund[124] or with the $1.40/ton difference between the average price of stripped coal and of underground coal.[125] Peabody Coal Co.'s sixteen-year contract to supply the TVA plant at Paradise, Kentucky calls for 65 million tons at a base price of only $2.95/ton, but the company plans to keep its net profits at the current rate of $.42/ton.[127] (2) Costs expressed in per acreage figures also lose significance when compared with the value of the coal taken per acre stripped—$35,000 to $80,000.[128] Planting trees costs $30/acre and seeding pasture costs $30/acre.[129] Planting cropland, orchards and vineyards is no more expensive on reclaimed land than elsewhere. Preparing wildlife preserves and public lakes costs very little initially and upkeep may be born by a public agency or private sportsmen's club. Grading costs for forests, pastures, orchards, and vineyards vary from $35 to $300 per acre.[130] Total cost of this type of reclamation is indicated by the performance bonds required by the reclamation statutes, explained *infra*.[131] These bonds range from $100 to $500 per acre. Cost of grading for cropland, fairgrounds, and building sites may run as high as $600/acre.

These costs of reclamation have been reduced when stripping

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[123] Guernsey, *op. cit. supra* note 75, concluded in 1956 that reclamation required by the Kentucky reclamation act (KRS ch. 350 discussed *infra*) amounted to $.01/ton.

[124] See, Boner, *Mining Monsters*, The Wall Street Journal (Midwest Ed. June 7, 1961, p. 1, c. 1.)

[125] *Supra* note 26.

[127] Boner, *supra* note 124.

[128] See *supra* notes 20 and 41 and accompanying text.

[129] Approximately these figures were given the author in a letter from Irving Dickman, Chief of the Ohio Division of Reclamation (May 1, 1961), and in an interview with the Director of the Kentucky Division of Strip Mining and Reclamation (Frankfort, May 1961).

[130] Approximately these figures were given the author in letters from Mr. Dickman; L. E. Sawyer, Director of Conservation, Mid-West Coal Producers Inst., Inc., Chicago, May 4, 1961; L. J. Timms, Director of the West Virginia Dep't of Mines (May 2, 1961).

[131] Infra notes 198-201, 226-29, and accompanying text. Even though it may require bonds up to $250/acre, the Kentucky Strip Mining and Reclamation Comm'n now requires only $100/acre which it has found to be sufficient to reclaim the spoils on a contract basis.

procedures are planned so as to reduce the cost of reclamation without noticably increasing the cost of removing the overburden. This planning is done when operators become aware that reclamation is profitable or that it is mandatory. New procedures and machines have been employed which leave the best soil on top rather than beneath the spoils, and which allow all grading to be completed before the stripping machines must be moved.[132]

It is of extreme importance to note that *"costs"* as discussed in the preceding paragraphs are *gross costs.* Few persons seem to realize that *there should be no net cost of reclamation if it is done properly.* Reclaimed land is as valuable as it was before stripping,[133] but unreclaimed land is almost worthless. Reclamation also benefits strip miners who do not own the surface or the right to strip by reducing their royalties. The good will of the public is an additional acquired asset to any strip miner.

IV. Methods of Guaranteeing Reclamation

Assuming that reclamation is a public necessity and is beneficial to the strip miner, the rest of this note examines methods and devices which states and individuals *have used* or *could use* to insure that all spoil banks will be reclaimed. Some of these are available only to counties or individual land owners. The need for this insurance was caused by the failure of sufficient reclamation on a voluntary basis.[134] Voluntary reclamation has been extensive only in Illinois—amounting to 55% of all acreage disturbed.[136] Many strip miners failed to see how reclamation could benefit them. Hard-pressed, small-

[132] For example, the wheel excavator, a mammoth new machine, operates in the pit just ahead of the stripping shovel by digging up the top 10-12 feet of soil and loose clay with its large revolving wheel, rimmed with buckets which claw the overburden. The buckets dump onto a conveyor belt, running on a boom which carries the dirt 200 feet and spreads it over new spoil banks. In the prairie states this machine has helped produce new pasture and cropland worth more than the land prior to stripping, but will be of only doubtful benefit in Kentucky. Also, where union contracts have resulted in "feather-bedding" of operators of bulldozers, graders, and draglines, these employees can be used in immediately completing all necessary grading before the spoils become packed and eroded.

[133] The articles cited in *supra* notes 110-18 support this statement. Most stripped land was submarginal pasture or forest before it was stripped. This process has a rejuvenating effect by loosening the packed surface and bringing the rich supply of minerals in the deep overburden to the surface. The Illinois court recognized this effect in Midland Elec. Coal Corp. v. Knox County, 1 Ill.2d 200, 115 N.E.2d 275, 282 (1953) (discussed in *supra* note 106).

[134] See, *e.g.*, Ky. Dep't of Conservation, Quadrennial Report: Div. of Strip Mining and Reclamation 1 (1959).

[136] Yet, because of the small operator's lack of responsibility the stripping industry decided to support the passage of the 1961 Illinois Reclamation Act, *infra* note 138. It chose to be subjected to 100% reclamation rather than let the small operator poison the whole industry in the public's eye. Letter from L. S. Weber, Ass't Director of Conservation, Mid-West Coal Producers Inst., Inc., Chicago, to the writer, April 10, 1961.

time operators, who mine on a royalty basis and move frequently, have no interest in the long-time benefits of reclamation. This group has been increased by the growing number of auger operators who are salvaging deep coal in the old spoil fields and around mountains.

A. *Reclamation Statutes: A Comparison*

Since 1939, seven states,[138] which produce 86% of our stripped and augered coal,[139] have enacted statutes proscribing standards of reclamation for operators to follow under the direction of a state agency. These enactments were supported by legislative fact-finding surveys,[140] newspaper editorials[141] and, in general, public opinion. The Kentucky act (KRS ch. 350) was adopted in 1954 after unsuccessful attempts in five successive biennial sessions[142] and has been "strengthened" by amendments in 1956, 1960 and 1962. The other six acts have experienced a similar amending process; three were substantially amended in 1961.[143]

Constitutionality. The constitutionality of these acts was apparently settled in the respective state courts between 1947-49. In 1947 the first Illinois act was invalidated[144] because (1) it required *all* spoils to be *immediately leveled* to approximately the original contour of the land, (2) it did not contain a legislative policy statement justifying the regulation by considerations relating to the public health, safety or welfare, and (3) it unreasonably discriminated against coal strip miners in applying only to them and not to those who quarried clay, stone, sand and gravel. In 1948, the Pennsylvania act, which did not require complete leveling and which contained a policy statement,

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[138] Ill. Stat. Ann. ch. 93, §§180.1-.13 (Supp. 1961) (first act invalidated in 1943; second act passed in Aug. 1961); Ind. Stat. Ann. §§46-1501 to 46-1513 (1952) (passed in 1941, amended in 1951); KRS ch. 350 (passed in 1954, amended moderately in 1956, 1960 and 1962) (For 1962 amendment see S.B. 145 and The Legislative Record (Ky.) p. 7 (#45 Mar. 17, 1962); Md. Code Ann. art 66C, §§ 657-74 (1957 Supp. 1961) (passed in 1947), amended in 1951, 1955 and 1959); Ohio Rev. Code Ann. §§1513.01 to 1513.99 (1954 Supp. 1961) (passed in 1947, amended in 1949, 1953 and 1959); 52 Pa. Stat. Ann. §1396.1 to 1396.19 (1954 Supp. 1961) (passed in 1945, amended in 1956 and 1961); W. Va. Code Ann. §§2312(35)-(35g), 2461(2)-(10d) (1961) (passed in 1939, amended in 1945, 1959 and 1961).

[139] 1960 Mineral Yearbook 91-97.

[140] See *supra* notes 55 and 86 and accompanying text.

[141] For example, the Louisville newspapers extensively covered the need for regulation of strip mining. See, *e.g.*, Tom Wallace, *Will the Next Legislature Control Stripping*, Times, Dec. 1, 1953, and Tom Wallace, *Kentucky Needs a Law Regulating Strip Mining*, Times, Sept. 26, 1949; Editorial, Courier-Journal, Jan. 28, 1948, §3, p. 2, col. 2. These newspapers continue to help guarantee reclamation by their editorials exposing the evils from insufficient enforcement of Kentucky's reclamation statute, KRS ch. 15. See *supra* note 2.

[142] See LRC, "Strip Mining," at (i) (Bull. No. 10, 1954).

[143] See *supra* note 138.

[144] Northern Illinois Coal Co. v. Medill, 397 Ill. 98, 72 N.E.2d 844 (1947). See Note, 23 Ind. L.J. 168 (1948).

was upheld as having a substantial relation to the public interest and as not being arbitrary in applying only to coal miners.[145] In 1949 the first Maryland act was invalidated as a denial of equal protection *but only* to the extent that it expressly applied to only one of the two counties which stripped coal.[146] However, all but two paragraphs of the five-page Maryland opinion is dictum supporting the act against numerous constitutional attacks.

That any of the present seven statutes will ever be invalidated is doubtful for reasons in addition to the weight of the Pennsylvania holding and the Maryland dictum. (1) The courts of West Virginia[147] and Kentucky[148] have expressly recognized the policy of reclamation legislation. (2) All acts apply to the entire state,[149] (3) none require grading of all spoils, much less leveling to the original contour, and (4) all contain policy provisions[150] stating or implying that certain facts found to be true justify an exercise of the police power. For example this is the policy statement found in the 1961 Illinois act:

> It is hereby declared to be the policy of this state to provide, after mining operations are completed, for the reclamation and conservation of land subjected to surface disturbance by open cut mining and thereby to preserve natural resources, to encourage the planting of forests, to advance the seeding of grasses and legumes for grazing purposes and crops for harvest, to aid in the protection of wildlife and aquatic resources, to establish recreational, home and industrial sites, to protect and perpetuate the taxable value of property, and to protect and promote the health, safety and general welfare of the people of this State.[151]

Strip miners frequently contend that "the states are without authority to demand a land use other than the one favored by the land owner himself."[152] But where sufficient public interests are endangered, the following exercises of the police power are constitutional: zoning ordinances limiting land use,[153] abatement of public nuisances,[154]

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[145] Dufour v. Maize, 358 Pa. 309, 56 A.2d 675 (1948); Comments, 96 U. Pa. L. Rev. 703 (1948), 9 Pitt. L. Rev. 298 (1948).

[146] Maryland Coal & Realty Co. v. Bureau of Mines, 193 Md. 627, 69 A.2d 471 (1949).

[147] See Reed v. Janutolo, 129 W. Va. 563, 42 S.E.2d 16, 21 (1947).

[148] See Kodak Coal Co. v. Smith, 338 S.W.2d 699, 700 (Ky. 1960). Blue Diamond Coal Co. v. Neace, 337 S.W.2d 725, 728 (Ky. 1960).

[149] However, Md. Code Ann. art. 66C, §674 (1957), provides that the act "shall apply to Allegheny and Garrett counties only." These are the only two where strip mining is now practiced but if it should spread, the act would be subjected to invalidation as in 1949. See *supra* note 145 and accompanying text.

[150] *Supra* notes 86 and accompanying text.

[151] Ill. Stat. Ann. ch. 93, §180.2 (Supp. 1961).

[152] *E.g.*, Schoewe, *Land Reclamation*, 46 Min. Cong. J. 92 (Oct. 1960).

[153] See KRS ch. 100; Village of Euclid v. Amber, 272 U.S. 365 (1926); Notes, 49 Ky. L.J. 142 (1960), 45 Ky. L.J. 507 (1957).

[154] *E.g.*, KRS 212.245(6), 86.150, 85.180, 84.220, 252.190, 249. 110, 217.330, 220.260; Harper & James, Torts §1.29 (1956).

statutes requiring livestock men to fence their land,[155] statutes regulating land use which pollutes streams,[156] establishment of soil and water conservation districts[157] and flood control districts,[158] regulation of depletion of natural resources[159] and destruction of an individual's interest because of a superior public interest.[160] In comparison, the reclamation acts are much less a "taking" without due process for the use they impose is only temporary. The strip miner's obligation terminates upon completion of the planting and grading necessary as determined by the state, to enable nature to return the spoils to productivity. Thereafter he is not obligated in any way to maintain the spoils he has reclaimed and is free to use them as he wishes.

(5) After 1961, reclamation requirements imposed solely upon bituminous coal miners will not be held unreasonable. This prediction is supported by the Pennsylvania opinion which found this classification reasonable even though the act then did not apply to the extensive anthracite strip mines in northeastern Pennsylvania.[161] The Pennsylvania court found that the dangers of combustion of unmined coal and possible flooding of adjacent underground mines was present only in bituminous stripping. In the other six states, which mine no anthracite, additional factors supporting reasonable classification are present, *i.e.*, strip mining of other minerals[162] does not spoil as much countryside scenery, remove as much land from agricultural use, create a danger to county revenues, cause extensive soil erosion, "sour" as much adjoining land, pollute as many streams, nor so endanger the lives of humans, livestock and wild life. Furthermore in each of these six states, coal miners operate at a higher financial scale and constitute a much larger class than any other strip miners. Since these

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155 See KRS ch. 256.

156 See KRS ch. 220.

157 See KRS ch. 262 and *infra* notes 288, 289 and accompanying text.

158 See KRS 104.450-.680.

159 Rosenson, *The Power of a State over its Natural Resources,* 17 Tulane L. Rev. 256 (1942); Summers, *The Modern Theory and Practical Application of Statutes for the Conservation of Oil and Gas,* 13 Tulane L. Rev. 1 (1938); Note, 23 Ind. L.J. 168, 178 (1947).

160 [W]here public interest is involved preferment of that interest over the property interest of the individual, to the extent even of its destruction, is one of the distinguishing characteristics of every exercise of the police power which affects property. Miller v. Schoene, 276 U.S. 272, 279 (1928); Harper & James Torts §1.29 (1956).

161 A similar reclamation act applicable only to anthracite strippers was passed in 1947. This was two years after the Pennsylvania case was decided by the trial court, yet it also was seven months before the appellate opinion in Dufour v. Maize, 358 Pa. 309, 56 A.2d 675 (1948). For a discussion of the two Pennsylvania acts as of 1953, see Schulz, Conservation Law and Administration 448-456 (1953).

162 Besides those commonly mentioned—clay, sand, stone, and gravel—"other minerals" includes marble, ganister, shale, cannel coal, and the metallic minerals.

factors are now so much more evident and well-known than in 1947, it is doubtful even the Illinois court would again conclude: "There is no reasonable ground for distinguishing between the strip-mine operator who mines coal and any other. . . ."[163] This is even more doubtful since in 1961 this court became the first to uphold a city zoning ordinance which completely *prohibited* strip mining[164] even though as late as 1953 it had invalidated a similar county ordinance.[165] The 1961 Illinois legislature however, preempted this controversy by making its act applicable to the strip "mining of coal, clay, stone, sand, gravel or other minerals. . . ."[166] All other acts apply only to coal mining except Kentucky's which since 1960 applies to the strip mining of clay[167] other than "ball clay."[168] KRS 350.020, the policy provision (which has not been correspondingly amended) still provides:

> The General Assembly further finds that other commercial activities involving the removal of minerals and other natural substances other than coal from the earth by strip mining occasionally cause conditions or create results of the character enumerated above, but that no imminent or inordinate peril presently exists by reason thereof.

Exemptions. Since anyone who strips coal would help cause the destructive effects the reclamation acts were designed to prevent, any exception among this class would again raise the question of constitutional discrimination. Yet, prior to 1959 only one act[169] applied to all within the class; two more now have no exemptions.[170] Miners producing less than a certain number of tons annually are still exempted in Kentucky (100, formerly 250),[171] Indiana (2500)[172] and Ohio (250 from "any one designated strip mine").[173] These exemptions were probably intended to reduce administrative problems, but they are discriminatory since those producing more than the minimum exemption must reclaim all spoils, not just those created by production in excess of the minimum. An "administrative exemption," if one

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[163] Northern Illinois Coal Corp. v. Medill, 397 Ill. 98, 72 N.E.2d 844, 848 (1947).

[164] Village of Spillertown v. Prewitt, 21 Ill.2d 228, 171 N.E.2d 582 (1961), as explained in *supra* note 106.

[165] Midland Electric Coal Corp. v. Knox County, 1 Ill.2d 200, 115 N.E.2d 275 (1953), as explained in *supra* note 106.

[166] Ill. Stat. Ann., ch. 93, §180.3(b) (Supp. 1961).

[167] KRS 350.010(1).

[168] KRS 350.190.

[169] W. Va. Code Ann., §§2312(35)-(35g), 2461(2)-(10d) (1961).

[170] Md. Code Ann., art. 66C, §672 (1957 Supp. 1961), no longer excludes those producing less than 250 tons annually, but now excludes only prospectors who do not market coal found. The exclusion is nullified by their statutory obligation to backfill the prospected area. Pennsylvania's 250-ton exemption was repealed in 1961. See, 52 Pa. Stat. Ann., §1396.17 (Supp. 1961).

[171] Ky. 1962, S.B. No. 145, §1(5).

[172] Ind. Stat. Ann. §46-1502 (1952).

[173] Ohio Rev. Code Ann. §1513.01(e)(f) (Supp. 1961).

is necessary, would have a higher correlation with the purposes of acts if determined upon the number of acres spoiled rather than annual tonnage. Furthermore, this standard could be easily applied without reliance upon sales slips which have proven to be a temptation for fraud. The 1962 Kentucky legislature employed this standard in exempting prospectors who disturb less than ¼ acre.[175] The unique Illinois standard, which exempts those who mine where the overburden is less than 10 feet, will probably create administrative problems rather than avoid them.[176]

The West Virginia[177] and Pennsylvania[178] acts contain another but less rational exemption—auger mining. Apparently it is also exempted from three other acts[179] which define "strip mining" too narrowly to include auger mining, at least not that practiced in connection with contour stripping. The Ohio and Kentucky acts have been amended to include augering.[180] Even before this amendment, the Kentucky act had been applied to auger operators pursuant to a 1954 Attorney General's opinion.[181] The change was timely because in 1961 the Kentucky court held that prior to the amendment the act had not been intended to include auger mining.[182]

A third exemption among coal miners is made by the Indiana act which requires reclamation only by those who carry "on a business of mining or selling coal removed by the strip mining process. . . ."[185] The Kentucky act applies only to those who mine "commercial" coal or clay,[186] however, this term is probably meant only as a mineral classification. While the Indiana exemption may benefit some farmers by freeing domestic strip mining, it is undesirable in that it apparently would also free utilities or manufacturers, who strip their own coal, from reclamation requirements. Furthermore, since the other six acts are doubtlessly not enforced against domestic strip miners, such an express exception is unnecessary, realistically.

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175 Ky. 1962, S.B. No. 145, §1(5).
176 Ill. Stat. Ann. ch. 93, §§180.4, 180.5, 180.13 (Supp. 1961).
177 W. Va. Code Ann. §2312(35a) (1961).
178 Except for one safety provision, the Pennsylvania act excludes "highwall mechanical mining," which probably refers to augering as well as to continuous-mechanical underground mining. See Pa. Stat. Ann., §1396.10 (Supp. 1961).
179 Ill. Stat. Ann. ch. 93, §180.3(b) (Supp. 1961); Ind. Stat. Ann. §46-1502 (1952); Md. Code Ann. art. 66C, §658 (1957).
180 KRS 350.010(1). Ohio Rev. Code §1513.19, (added in 1959) in verboseness characteristic of the Ohio statute, simply extends the same reclamation requirements to auger operators.
181 The Attorney General's opinion is quoted in the text accompanying *infra* note 269. See also, Ky. Dep't of Conservation, Quadrennial Report: Strip Mining & Reclamation Comm'n 3 (1959).
182 Commonwealth v. Wombles, 346 S.W.2d 299 (Ky. 1961) (for discussion, see *infra* notes 266-273 and accompanying text).
185 Ind. Stat. Ann., §46-1502 (1952).
186 KRS 350.010(1), (2).

The Agency. The following sentence from the Kentucky public policy provision sets the tone of administrative policy found throughout the Kentucky act and, to a lesser degree, throughout the other six acts:

> The General Assembly further finds that there are *wide variations in the circumstances and conditions* surrounding and arising out of strip mining of coal due primarily to differences in topographic and geological conditions and by reasons thereof it is necessary in order to provide the most effective beneficial and equitable solution to the problem that *a broad discretion be vested in the authority* designated to administer and enforce this act. (Emphasis added.)[187]

The philosophy expressed in this sentence was suggested to the General Assembly by the Kentucky Legislative Research Comm'n (LRC) in its summations of fact-finding studies in 1949[188] and 1954.[189] The LRC recommended enactment of regulatory legislation but gave this view of the difficulty ahead in drafting an effective, constitutional act—"Considering all angles, Kentucky legislators have a Herculean task. . . ."[190] The primary source of the difficulty was the "wide variations in circumstances and conditions" that cause contour stripping to be common in Eastern Kentucky and trench stripping to be characteristic of Western Kentucky, and neither type to be confined to either area. The LRC also listed less obvious variances.[191] In no other state are stripping methods and conditions so diverse. Therefore, the General Assembly decided "the authority" was to be given "broad discretion" rather than to be restricted to numerous specific statutory standards based upon either geographic or mining differences. Specific standards are common in the acts of six other states.

Prior to 1962, the Kentucky act indicated that this "broad discretion" had unintentionally been dispersed among three agencies. The cause was the unfortunate manner in which 1956 and 1960 amendments had been drafted.[192] In 1960, the Assembly had obviously in-

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[187] KRS 350.020.

[188] LRC, Strip Mining in Kentucky 49-54 (Research Pub. No. 5, 1949).

[189] LRC, Strip Mining 15 (Bull. No. 10, 1954).

[190] LRC, Strip Mining in Kentucky 54 (Research Pub. No. 5, 1949).

[191] LRC, Strip Mining 13 (Bull. No. 10, 1954), stated that there are no drainage problems in relation to acid and copperas water resulting from contour stripping in Eastern Kentucky. Eastern stripping creates a fire hazard endangering the surrounding timber and exposed coal to a far greater extent than in the West, and the base cut in contour stripping forms ready-made roads and fire lanes.

[192] Originally the independent Strip Mining and Reclamation Agency (SMRC), composed of the Comm'r of Conservation, as chairman, the Chief of Mines and Minerals and the Director of Strip Mining and Reclamation, was the sole administrative "authority." In 1956 the SMRC was abolished and its "authority" transferred to the Dep't of Conservation. An Advisory Committee, composed of the three former SMRC members, was created within the department. A new division within the department was specifically delegated most of the policy-making powers and some ministerial work. The department was delegated

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tended the new Strip Mine Reclamation Comm'n (SMRC), composed of the Comm'r of Conservation, the Comm'r of Mines and Minerals, and the Director of Strip Mining and Reclamation, to be the policy-maker and the Director to be the ministerial official. But the face of the act showed that:

> a few policy-making powers and most ministerial duties were vested in the SMRC;
> most policy-making powers and some ministerial duties were vested in the Director under the express supervision of the Comm'r of Conservation;
> only the Dep't of Conservation had power to hear appeals from administrative orders;
> the members of the SMRC also composed an "advisory committee" within the Dep't of Conservation.

1962 amendments clearly provided for what was intended in 1960.[193] However, one additional change is necessary to nullify all ambiguity.[194]

The composition of the SMRC combines the expertness of two agencies materially interested in the effects of strip mining; the Comm'r of Agriculture could be added as a third. Only one other act combines the facilities of more than one responsible agency.[195]

Procedure. (1). Licensing. Prior to any strip mining, the miner must apply for a permit for one year, or in Pennsylvania, for the duration of the operation.[196] Since 1962, Kentucky's permit fees

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(Footnote continued from preceding page)
all other duties by a mere change of the definition of "commission" as used throughout the act from "SMRC" to "Dep't." In 1960, the SMRC was recreated, but within the department and the act's definition of "commission" was again changed to "SMRC." The obvious legislative intent was for the new SMRC to be the policy-maker and the division to carry out the ministerial duties, but the face of the act showed they shared both. The change in the definition of "commission" had not affected powers specifically delegated to the "division" in 1956. The 1962 amendments clearly provided what was intended in 1960 by expressly granting ministerial duties to the division and the higher duties to the new SMRC. Also the 1956 Advisory Committee was finally abolished and most important, the new SMRC was delegated the power to review all orders—a power which had unintentionally been left with the department in 1960.

This development is discussed in more detail in an unpublished paper by the author, "Regulation of Strip Mining" at pp. 31-35, 40-42 (1961). Sources of information were Ky. 1962, S.B. 145; Ky. Acts 1960, ch. 143; Ky. Acts 1956, 1st Sess., ch. 7, art. VII; Ky. Acts 1954, ch. 8; Dep't of Conservation, Quadrennial Report: SMRC (1959); and a mimeo prepared by the SMRC in 1961 explaining all requirements under the Kentucky reclamation program and sent to all operators.

[193] These changes are explained *ibid.*

[194] KRS 146.010(1) (d), passed in 1956 when it had a purpose (*ibid.*) should now be repealed because it provides:

> KRS 146.010(1) The Department of Conservation shall exercise all administrative functions of the state relating to:
>
> . . .
>
> (d) Strip mining and reclamation, *heretofore performed by the Strip Mining and Reclamation Commission,* except as otherwise provided.

Amendment by omitting the underlined words would serve the same purpose.

[195] W. Va. Code Ann. §§2312(35), 2461(2) (1961).

[196] 52 Pa. Stat. Ann. §1396.4 (Supp. 1961).

($50/year plus $15/acre to be stripped) are potentially the highest.[197] The applicant must supply a map and other data concerning the land and minerals expected to be stripped during the operation. Simultaneously, a performance bond must be filed which in Kentucky may be $100 to $250/acre as determined by the SMRC considering the "future land use and cost of reclamation of the land involved."[198] Since 1962, the minimum total bond has been $1000;[199] the SMRC generally requires $100/acre.[200] The amount of bonds required by the other acts is higher but expense to the miner may be lower for these acts (1) require bonds only on acres expected to be stripped in that year, and (2) permit deposits of cash and securities in lieu of bonds.[201] Kentucky strip miners should also be given the chance to make this saving.

(2) Planning. From this point, Kentucky procedure is typical unless an exception is noted. A Kentucky operator must prepare and submit a reclamation plan within 60 days after the permit is issued. His plan must be approved by the Director,[202] and must, within the SMRC's "broad discretion," require[203] the operator to:

> cover the face of the coal or clay, and where practical, all toxic materials and subcoals determined by the Division to be acid-producing or creating a fire hazard;

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197 The Kentucky act has never limited the maximum filing fee. See Ky. 1962 S.B. 145 §4(d). Fees in other states vary up to as much as $500 (Ind. Stat. Ann., §46-1504 (1952).), and all have maximum limits except Ohio. Ohio Rev. Code §1513.07 (Supp. 1961). Revision is not necessary because operators probably list only those acres which they plan to strip in that year and not for the entire operation as the statutes imply.

198 KRS 350.060(4).

199 KRS 350.060(4) (an exception may be made in the SMRC's discretion).

200 See 1961 Memo sent by SMRC to all operators at p. 5.

201. Ill. Stat. Ann. ch. 93, §180.8 (Supp. 1961) requires $1,000 plus $200/acre in excess of 5 acres expected to be stripped in that year; Ind. Stat. Ann. §46-1507 (1952) requires $1,000 plus $200/acre in excess of 5 acres proposed to be stripped in that year and cash deposits are acceptable as deposits; Md. Code Ann. art. 66C, §659 (Supp. 1961) requires $1,200 plus $300/acre in excess of 4 acres for all acres the operator estimates will be stripped and cash and U.S. bonds are acceptable as deposits; Ohio Rev. Code Ann. §1513.08 (Supp. 1961) requires $200/acre for acres estimated to be stripped within the year and cash, U.S. securities and Ohio bank notes are acceptable as deposits; 52 Pa. Stat. Ann. §1396.4 (Supp. 1961) requires $4,000 and $400/acre for all above 10 acres for all acres estimated to be stripped during the registration year and deposits of cash and U.S. and Pa. bonds are acceptable; W. Va. Code Ann. §2312(35b) (1961) requires $500/acre for each acre covered by the permit. All acts provide that the bond requirement may be adjusted to meet unexpected increase or decrease in acreage during the period which the permit covers.

202 KRS 350.090. Ohio Rev. Code Ann. §1513.16 (Supp. 1961), allows an operator to follow his reclamation plan even though it is not approved by the agency. But his bond then will not be released for five years and then conditioned upon his results being judged satisfactory. The West Virginia act apparently requires no plan.

203 Prior to 1960 these enumerated practices were expressly mandatory in KRS 350.090, but it now provides that they "may be required" of plans formed

(Continued on next page)

> seal off any break-through creating a hazard;
> impound, drain or treat all run-off water so as to reduce soil erosion, damage to agricultural lands and pollution of any waters;
> remove or bury all metal, lumber and other refuse from stripping;
> cover all holes made by auger mining;
> refrain from dumping any debris onto any public road, property or waters; and
> "*grade the overburden* where practical and *provide vegetable cover.*" (Emphasis added.)[204]

The generality in which these standards are expressed is atypical among the seven reclamation acts. Within its "broad discretion" the SMRC has interpreted[205] "grading where practical," to require all "overburden" and isolated peaks to be graded uniformly to an average 25-foot width and all isolated peaks to be reduced to the level of the graded "overburden." Technically, the SMRC interpretation and the statute require grading only the "earth and other materials which are removed to gain access to the coal" because this is the definition of "overburden" as used in the act.[206] But they could be interpreted to also require uniform grading of *the undisturbed side along last cuts* since this "highwall" is generally referred to as the "overburden" by miners.[207] The drafters of two other acts defined "overburden" to include both usages:

> 'Overburden' means all of the earth and other materials which lie above natural deposits of coal . . . and also means such earth and other materials disturbed from their natural state. . . .[208]

The interpretation of "overburden" therefore is important in that it might indicate legislative permission for the SMRC to require highwalls to be uniformly reduced to the level of the graded spoils.[209] Agencies of other states have this authority only by implication.[210]

(Footnote continued from preceding page)
under SMRC regulations and approved by the Director. SMRC-Reg.-2 (July 1961) again made these practices mandatory unless the Director found that unusual circumstances warrant a modification.

[204] KRS 350.090.

[205] SMRC-Reg.-2(e) (July 1961) provides:

> Grade the overburden where practicable, and provide suitable vegetative cover; (where practicable, as used in this subsection, means overburden shall be graded to a uniform grade with an average width of 25 feet so as to reduce the peaks and the depression between the peaks to minimize erosion due to rainfall and make the surface more suitable for grazing or tree cutting or logging operation, and in such areas in which any overburden contains isolated peaks, such peaks shall be graded to a minimum width of 25 feet and no said graded peaks shall exceed the height of the graded overburden).

[206] KRS 350.010(2).

[207] See description in *supra* note 1.

[208] Quoted from Ill. Stat. Ann. ch. 93, §180.2 (Supp. 1961). 52 Pa. Stat. Ann. §1396.3 (1954) is very similar.

[209] See *supra* note 203.

[210] *Cf.* Ill. Stat. Ann. ch. 93, §180.6(a)(b)(c) read with §180.3(a), (f), (g),(h) (Supp. 1961); 52 Pa. Stat. Ann. §1396.10 (Supp. 1961).

Such a requirement would not be unreasonable in Kentucky since the SMRC can make exceptions when necessary.

The second controversial phrase, "vegetable cover," has been interpreted[211] by SMRC to require planting standards based upon percentage of survival rather than the amount of seeding or planting attempted. The standard required for grasses and legumes is 70% ground cover without bare areas over ¼ acre. The standard for "woody plants" is divided into two classifications depending on steepness of slopes, number of rocks exposed, and acidity of the top six-inches of surface. These standards are respectively 600 and 400 living trees or planted shrubs per acre. The SMRC does not inspect the stand of any vegetation before 90 days after planting.

All concerned probably would benefit if statutory amendment or SMRC regulation would require the following reclamation practices required in other states:

backfilling of all pits within 100 feet of any public right-of-way and within 200 feet of any occupied building, unless released by the owners;[212]

reduction of any highwall within 750 feet of 5 houses, a school, or a church to an angle of 70 degrees;[213]

construction of dams in final cuts where lakes may be formed safely, in lieu of any grading or backfilling requirements;[214]

construction of fire lanes or access roads through afforested spoils;[215]

construction of outlets to conduct storm and seepage waters to a stream;[216]

provision of all data available, such as probable composition of spoils, population of surrounding area, etc., relevant to a determination of whether the creation of cropland or sites for homes, factories or recreation areas would be practical and economical to the operator (upon an operator's request the SMRC would be required to give all available assistance toward these developments.)[217]

reclamation by each operator, who previously stripped land which has not been reclaimed (whether it was stripped prior to this act or not), of an additional number of acres equal to 1% of the number he has stripped under his present permit.

The latter proposal is of most importance because it would enable

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[211] SMRC-Reg.-3 (July 1961).

[212] 52 Pa. Stat. Ann. §1396.5 (Supp. 1961). See Ill. Stat. Ann. ch. 93, §180.6 (a) (Supp. 1961).

[213] 52 Pa. Stat. Ann. §1396.10 (Supp. 1961).

[214] Ill. Stat. Ann. ch. 93, §180.6 (Supp. 1961); Ind. Stat. Ann. §46-1505(d) (1952); Md. Code Ann. art. 66C, §665(b) (Supp. 1961); Ohio Rev. Code Ann. §1513.16(D) (Supp. 1961).

[215] Ill. Stat. Ann. ch. 93, §180.6(d) (Supp. 1961); Ind. Stat. Ann. §46-1505 (e) (1952); Ohio Rev. Code Ann. §1513.16(B) (Supp. 1961).

[216] W. Va. Code §2316(35c) (1961).

[217] This item should not be made mandatory but only stated in the statute so as to encourage higher reclaimed uses in Kentucky. The 1962 Illinois act made such a statement in its policy statement quote in the text accompanying note 151, *supra*.

the SMRC to effect reclamation of spoils created prior to 1954 or not reclaimed simply because of non-enforcement of the act. This provision has been given credit for reclaiming most of the Indiana spoils created before reclamation became mandatory.[218]

(3) Reclaiming. After receiving approval of his plan, the Kentucky operator must finish reclaiming his spoils "as soon as possible after the beginning of strip mining . . ." and the Director must allow him "a reasonable period" to do so.[219] This flexibility again indicates the extensive discretion given the SMRC, for the other state acts require completion within a flat one,[220] two,[221] or three[222] years after the entire operation is finished.[223] The six acts[224] which require planting in addition to grading make exceptions where additional weathering is required to reduce high acidity. The Director may allow an operator to plant older spoils in lieu of his original obligation[225] or may defer planting, in which case $50 of his bond is not released until planting is completed.[226] Two acts recognize that many operators cannot afford full-time conservationists and allow them to pay the state agency[227] or a local soil conservation district [228] for fulfilling their planting obligation. The SMRC has only implied authority to enter into such an agreement.[229]

Within 60 days after the expiration of his annual permit, the Kentucky operator must file a report of stripping and reclamation performed. If the report and an inspection of the area show that the SMRC's requirements have been met, his bond is released.[230] All funds received in fees and forfeited bonds may be used in reclaming spoils.[231] In order to enable the SMRC to restore areas stripped prior to 1954 it should be given the following powers which were delegated to the Ohio agency:[232]

> The SMRC (1) is required to conduct a continuing survey to determine if any land because of stripping should be

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218 Letter from L. E. Sawyer, Dir. of Conservation, Mid-West Coal Producer Inst. Inc., Chicago, to the author, May 4, 1961. See Annot., 8 Burns Ind. Stat. Ann., Part II at 924 (1952).

219 KRS 350.100.

220 Ind. Stat. Ann. §1505(g) (1952); W. Va. Code Ann. §2312(35c) (1961).

221 Ohio Rev. Code Ann. §1513.16 (Supp. 1961).

222 Ill. Stat. Ann. ch. 93, §180.6(g) (Supp. 1961).

223 52 Pa. Stat. Ann. §1396.6 & .11 (Supp. 1961).

224 Since 1959, the Maryland act has required no planting, only back filling.

225 KRS 350.100.

226 KRS 350.110.

227 52 Pa. Stat. Ann. §1396.11 (Supp. 1961).

228 W. Va. Code Ann. §2312(35c) (1961).

229 See KRS 350.140, 350.150.

230 KRS 350.120 does not require the inspection but apparently the SMRC makes an inspection as a matter of policy. See, SMRC Memo. *supra* note 200, at 4.

231 KRS 350.140.

232 Ohio Rev. Code Ann. §§1513.02, 1513.20-.25 (Supp. 1961).

> reclaimed in order to preserve the resources of the state;
> (2) may purchase such land without condemnation, reclaim it, and then transfer it to any state agency or sell it;
> (3) may receive such land or any land as a gift or, at the operator's request, in lieu of reclamation requirements;
> (4) shall place all funds received in these sales in the Strip Mining and Reclamation Fund (KRS 350.140).

Sanctions. Since 1960, the Kentucky act has imposed more sanctions than any other. Besides those sanctions common to all acts—forfeiture of bonds, revocation of permits, prosecution for a misdemeanor and a fine—the Director may also request the Attorney General to sue for civil penalties or for an injunction.[233] The civil remedy is unique, but additional enforcement could be provided at the "grass roots" level without added expense to the state if the following amendment were adopted:

> Any owner of surface which is not reclaimed as provided in this chapter may bring this civil action in his own name.

The 1962 amendment granted venue for this action to the Franklin Circuit Court as well as to the circuit court having jurisdiction of the operator. The lower courts had proven to be biased against the SMRC in some instances.[234] Violators of two acts may be imprisoned,[235] but Kentucky's contains only a criminal fine—$500 to $1,500 per day. One Kentucky operator was fined $30,000.[236]

The effectiveness of the Kentucky act could be enhanced if the SMRC were delegated the power to refuse applications for and renewals of annual permits.[237] Its express power to revoke permits would logically imply the power to refuse the same, but the Court of Appeals has held that a Kentucky agency with express power to suspend or revoke licenses does not have implied power to refuse one upon proper application.[238] Therefore, any applicant, who tenders filing fees and necessary data, apparently now has an absolute right to a Kentucky permit even though he has continually violated reclamation requirements.

Effectiveness of the Kentucky Act. The Kentucky reclamation statute places the most discretion in its administrative agency and

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[233] KRS 350.990(1)(2).
[234] Interview with Wayne Carroll, former Ass't Atty. Gen. assigned to the SMRC.
[235] 52 Pa. Stat. Ann. §1396.20 (1954); W. Va. Code Ann., §2312 (1961).
[236] KRS 350.990(3); Commonwealth v. Wombles, 346 S.W.2d 299 (Ky. 1961).
[237] Ind. Stat. Ann. §46-1504, 46-1509 (1952), and Ohio Rev. Code Ann. §1513.07 (Supp. 1961), delegate authority to deny for cause.
[238] Johnson v. Correll, 332 S.W.2d 843 (Ky. 1960).

provides the most sanctions and the highest penalties. Cooperation received from the larger Kentucky operators has continually increased since 23 Western Kentucky operators formed the Kentucky Reclamation Ass'n (KRA) in 1948. The KRA has grown to members located in both Kentucky coal fields and has become a valuable aid by cooperating extensively with the SMRC, experimenting in forestry, supplying seedlings, and promulgating data from its experiments and those of the Central Forest Experiment Station, Columbus, Ohio. Despite these factors, the general consensus[239] is that reclamation in Kentucky has lagged behind even that in Illinois which had no statute from 1947 to 1961.[240] The 1962 amendments and the adoption of the additional provisions suggested *supra,* may help effect the General Assembly's goals[241] and encourage higher uses of reclaimed land. But the future of reclamation in this state will be determined to a large extent by the SMRC and the Court of Appeals. Unless these two elected bodies aid the reclamation effort, the public may become so aroused that the General Assembly will enact a "stronger" act which may arbitrarily restrict one of the state's important industries. For example, a bill introduced in 1962 proposed raising performance bonds to $10,000/acre.[242]

(1) Strip Mining and Reclamation Comm'n. The SMRC's record for the last few years indicates that lack of initiative on its part may be a thing of the past. When the 1960 amendments became effective, only 9 of 169 operators in Eastern Kentucky had permits and many less had filed bonds or reclamation plans. A year later there were 400 permit-holders thanks to a well-publicized campaign and the aid of the Attorney General. From 1954 until December 1960, the SMRC had not exercised its power to adopt regulations outlining procedural and reclamation requirements. Since then it has adopted three.[244]

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[239] See, *e.g.,* articles cited in *supra* notes 2, 141; letter cited in *supra* note 218; letter from Ralph Wilcox, State Forester, Ind. Dep't of Conservation, to author, May 1, 1961.

[240] See *supra* note 138 for explanation.

[241] KRS 340.020, the policy statement provides:

> The General Assembly finds that the unregulated strip mining of coal causes soil erosion, stream pollution, the accumulation of stagnant water and the seepage of contaminated water, increases the likelihood of floods, destroys the value of land for agricultural purposes, counteracts efforts for the conservation of soil, water and other natural resources, destroys and impairs the property rights of citizens, creates fire hazards and in general creates hazards dangerous to life and property. . . . Therefore, it is the purpose of this chapter to provide such reclamation and control of the strip mining of coal as to minimize its injurious effects as much as may be possible.

[242] Ky., 1962 H.B. 499.

[244] SMRC-Reg.-1 (Dec. 1960); SMRC-Reg.-2, 3 (June, 1961).

The following figures as to reclamation were taken from two recent SMRC publications for the period January 1956 to July 1961:[245]

acres reclaimed	19,649
trees planted	5,412,100
pounds of seed sowed	480,210
game fish stocked in pit lakes	183,800
game birds released	9,690

In two areas the SMRC has yet to show substantial progress. Collections on forfeitured bonds and civil actions have not been impressive.[246] However, the SMRC's blackest mark has been its failure to extensively publish and promulgate the benefits of reclamation in spite of its legislative mandate to do so.[247] This could stimulate reclamation far more than punitive measures for perhaps too much has been published about the injurious effects of strip mining and not enough about the benefits of reclamation to the individual strip miner.

(2) The Court of Appeals. The Kentucky court has held for the strip miner in all seven appeals against the SMRC or surface owners since the Kentucky reclamation act was adopted. An analysis of these cases shows that the court has used its influence to stimulate strip mining, but has not chosen to encourage reclamation in spite of the fact that the Kentucky legislature has gone farther than any legislature in making reclamation mandatory. In 1956, the *Buchanan* opinion, discussed at length *supra*,[248] made no reference to the reclamation act in holding that coal sold around 1900 under ambiguous "broad form" mineral deeds could be stripped without liability for destruction of the surface. In direct contrast, in 1947, the West Virginia court held *contra* because the enactment of West Virginia's reclamation act:

> [W]ith the plain purpose of controlling strip mining demands of this Court a strict construction of instruments upon which that practice is based. A liberal construction would be plainly contrary to the declared legislative policy.[249]

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[245] These figures were compiled from those given in Dep't of Conservation, News and Views (Sept. 1961); Div. of Strip Mining & Reclam., Ann. Report (Dec. 8, 1960); Dep't of Conservation, Quadrennial Report: Ky. Div. of Strip Mining & Reclamation (Dec. 31, 1959).

[246] In 1955 and 1956, only $300 was collected; in 1957 no money was collected; in 1958 and 1959 $10,011 was collected. Dep't of Conservation, *ibid.*

[247] KRS 350.050(2) provides that the SMRC shall exercise the power "to encourage and conduct investigations, research, experiments and demonstrations, and to collect and disseminate information relating to Strip Mining and the reclamation of lands and waters affected by strip mining."

[248] See Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956), discussed in the text accompanying notes 33-53 *supra*.

[249] West Virginia-Pittsburgh Coal Co. v. Strong, 129 W. Va. 832, 42 S.E.2d 46, 53 (1947). See the discussion in *supra* note 53.

The West Virginia court has continued to strictly construe instruments under which strip miners claim,[250] and once said that the reclamation act contained declarations of fact which would justify holding these instruments void as against public policy if the legislature had not sanctioned strip mining practiced in compliance with the act.[251] The courts of Pennsylvania[252] and Maryland,[253] have also indicated high regard for reclamation legislation.

In 1960, *Blue Diamond Coal Co. v. Neace*[255] extended the *Buchanan* immunity to damages to surface and minor improvements caused by auger mining even where underground mining is economical.[256] However, the opinion indicated that Justice Palmore doubted the wisdom of *Buchanan* for he wrote:

> [Right] or wrong, it would be a grave matter indeed for this court by overruling [*Buchanan*] now to upset property rights which have since vested in reliance upon it.[257]

This statement in the opinion was probably made in reference to the following one made by the lower court:

> The court, however, is of the opinion that . . . Buchanan v. Watson . . . is too harsh, and that the Court of Appeals will . . . modify or reverse that opinion. This court knows every Judge and Commissioner on the Court of Appeals and he knows that they are not cruel or cold hearted men, and it is his opinion that they, however, have not seen the havoc or devastation that has been brought and reaped upon many of the small property owners . . . and with very little, if any, effort on the part of the operators in alleviating or minimizing that havoc or distress. . . .[258]

The *Blue Diamond* opinion mentioned the Kentucky reclamation act only in referring to mining practices as "a matter of legislative regulation" unless proven to be "arbitrary, wanton, or malicious,"[259] Later in 1960, *Kodak Coal Co. v. Smith*[260] followed *Blue Diamond* and said:

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[250] *Ibid;* Note, 13 Wash. & Lee L. Rev. 76, 78 (1956).

[251] West Virginia-Pittsburgh Coal Co. v. Strong, 129 W. Va. 832, 42 S.W.2d 46, 53 (1947).

[252] See Wilkes-Barre Township School Dist. v. Corgan, 403 Pa. 383, 170 A.2d 97, 100 (1961); Rochez Bros. v. Duricka, 374 Pa. 262, 97 A.2d 825 (1953); *supra* note 145. *But see, supra* note 49.

[253] See Maryland Coal & Realty Co. v. Bureau of Mines, 69 A.2d 471 (1949).

[255] 337 S.W.2d 718 (Ky. 1960).

[256] *Id.* at 726-27; Brief for Appellee, Blue Diamond Coal Co. v. Neace, 337 S.W.2d 718 (Ky. 1960). However, *Buchanan* had placed the court in a strait jacket for as Justice Palmore said, "The mere exercise of a right to mine in a particular fashion cannot of itself be classified as arbitrary, wanton, or malicious." *Id.* at 727.

[257] *Id.* at 728.

[258] Record, p. 85; Brief for Appellant, p. 4, in the *Blue Diamond* case.

[259] Blue Diamond Coal Co. v. Neace, 337 S.W.2d 725, 727 (1960).

[260] 338 S.W.2d 699 (Ky. 1960).

> [W]e are aware that [augering] is not consistent with the best principles of land conservation. However, . . . the preservation of the land is a matter for the legislature.[261]

Again in 1961, the court held *Blue Diamond* could be changed only by the legislature.[262] This is truely a paradox—a court, which has declined to wait for legislative reform in several other areas,[263] waiting for the legislature to change one of its own policy decisions which was inconsistent with legislative policy the day it was rendered. The Kentucky legislature, more than any other legislature has been trying to force the strip miner to reclaim his own land as well as that of others while the Kentucky court has been absolving him from any responsibility for the destruction of land values.

The Court of Appeals has held for the defendants in the two appeals from prosecutions under KRS ch. 350. In 1959, the ground for reversal was that the defendant had not been proved to be "a person, partnership or corporation engaged in strip mining."[264] Yet, his testimony indicated that his business was to auger coal and sell it,[265] and he was proved to be the son of the exclusive head of the corporation doing the mining and a part-owner and part-time employee of the corporation. As an ancillary point the defendant had challenged the constitutionality of KRS ch. 350. The court did not take this opporunity to enhance the state's reclamation program, but simply stated:

> [W]e deem it unnecessary to address ourselves to the constitutional question raised.[266]

In 1961, the court affirmed acquittals of the same defendant, his father, and their corporation who had been prosecuted for auger mining without a permit from the SMRC.[267] The defense was that "auger mining" did not constitute "strip mining" as used in KRS ch. 350 prior to the 1962 amendment which expressly added "auger mining."[268] Previously, the court had treated strip and auger methods as one in the same in *Buchanan, Blue Diamond,* and *Kodak,* and the SMRC

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[261] *Ibid.*

[262] Ritchie v. Midland Mining Co., 347 S.W.2d 549 (Ky. 1961). See also, Beranden Coal Co. v. Matney, 320 S.W.2d 301 (Ky. 1959) which affirmed *Buchanan.*

[263] See, *e.g.,* Holt v. West Ky Coal Co., 350 S.W.2d 155 (Ky. 1962) (discussing prior "judicial legislation" in Workmen's Compensation law).

[264] Wombles v. Commonwealth, 328 S.W.2d 146 (Ky. 1959). This is the definition of an "operator" as used in the act. KRS 350.010(5).

[265] Record, p. 14; Brief for Appellee, p. 6 *ibid.*

[266] Wombles v. Commonwealth, 328 S.W.2d 146 (Ky. 1959). Neither brief indicates that either party considered the constitutional point to be important.

[267] Commonwealth v. Wombles, 346 S.W.2d 299 (Ky. 1961).

[268] Ky. Acts 1960, ch. 143, §3.

had applied the act to auger miners pursuant to a 1954 Attorney General's opinion that:

> 'Auger mining' is only a slight modification of what is commonly considered to be regular 'strip mining' and we believe that the [act's] broad definition of strip mining includes this similar mining technique.[269]

The court's opinion, however, did not mention these two factors and rejected the contention that the act's broad policy statement[270] inferred an intent to regulate any coal mining which caused the enumerated "injurious effects." Instead it construed the 1962 amendment as an admission by the General Assembly that the act did not previously include auger miners. The court also reasoned that "strip mining" had acquired a "technical meaning" which was restricted to those operations which removed practically all the overburden. The court's definition of this modern American mining process was taken from 5 *Encyclopedia Britannica* 911 (1945).[271] This opinion caused the reclamation program much embarrassment in requiring the SMRC to release 57 auger miners with permits covering 962 affected acres. This would not have happened had the court decided whether augering was covered by the act as the same defendant had contended in his first appeal in 1959.[272]

The court's apparent lack of concern for KRS ch. 350 may be due to the failure of all appellate briefs in these seven cases to mention, much less discuss, the act's importance. However, the strip miner's brief in *Buchanan* employed the act, by analogy for the opposite purpose—"this law assumes, of course, that the surface will not be completely destroyed, but may be rehabilitated. . . ."[273]

B. *Reclamation Ordinances: A Possibility*

The citizens of any county of the seven states which have adopted reclamation acts have been delegated the power to zone their counties.[274] In these states, enactment of county ordinances simply requiring compliance with the reclamation statute could add noticeably

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[269] Ops. Att'y Gen. of Ky. (No. 35,038 1954); Dep't of Conservation, Quadrennial Report: SMRC 3 (1959).

[270] KRS 350.020 quoted in *supra* note 241.

[271] Commonwealth v. Wombles, 346 S.W.2d 299, 301 (Ky. 1961).

[272] Wombles v. Commonwealth, 328 S.W.2d 146 (Ky. 1959); Brief for Appellant, p. 3; Brief for Appellee, pp. 6-7. For discussion see *supra* notes 267-68 and accompanying text.

[273] Brief for Appellant, p. 20, Buchanan v. Watson, 290 S.W.2d 40 (Ky. 1956).

[274] Ill. Stat. Ann. ch. 34, §3151 (1960); Ind. Stat. Ann. §§53-701 to 53-795 (1951 Supp. 1961); KRS 100.850-100.866, 100. 868; Md. Code Ann. art. 25A, §5(X), art. 66B, §9A (Supp. 1961); Ohio Rev. Code Ann. §§303.01-303.99 (1953 Supp. 1961); Pa. Stat. Ann. §2020-2039 (1956 Supp. 1961); W. Va. Code Ann. §§511-525eee(75) (1961).

to its execution. Local enforcement would not only serve as a check upon the state administrative agency, but it would be a practical way to enforce reclamation upon the small auger and strip miners. These operators move too frequently for the state officials to keep track, but if a local zoning official were given the responsibility of enforcing reclamation, his phone call to the state agency would not only tell him if the operator had a permit, etc., but would also put the agency on notice of the location of the miner's operation. Furthermore, if the operators know that the local populace is interested enough in reclamation to enact such an ordinance, their efforts to comply with the state act and to provide public recreational and wild life facilities would doubtlessly be stimulated.

A few counties have attempted zoning ordinances regulating strip mining,[275] but none are known to have simply required compliance with a reclamation statute. Such an ordinance would probably be constitutional since it would not be in conflict with a state's policy but rather in support of it.[276] However, if the county ordinance attempted to require higher or even different standards of reclamation than proscribed by the statute, the ordinance may be found unconstitutional for encroaching upon a field which the state intended to pre-empt.[277]

The enactment and context of a reclamation ordinance would be governed by the respective enabling statutes and whether the county is presently zoned. Only a small number of counties in the strip mining areas are known to be zoned; apparently no counties in the Kentucky coal fields are zoned. The KRS provisions on county zoning[278] are very confusing[279] and the task of drafting the required

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[275] See the county ordinances litigated in Merced Dredging Co. v. Merced County, 67 F. Supp. 598 (N.D. Cal. 1946) (reclamation of gold dredging spoils); Midland Elec. Coal Corp. v. Knox County, 1 Ill.2d 200, 115 N.E.2d 275 (1953) (discussed *supra* note 106). See also Schulz, Conservation Law & Administration 454 (1953).

[276] See Gibson v. City of Hardinsburg, 247 S.W.2d 31 (Ky. 1952); Webb v. City of Eminence, 282 Ky. 849, 140 S.W.2d 622 (1940); Arms v. Town of Vine Grove, 203 Ky. 213, 262 S.W. 11 (1924); 1 Antieau, Municipal Corp. §5.21 (1958). Trailer court zoning ordinances frequently require that the operator comply with state health, sanitation, and motor court laws.

[277] See Agnew v. City of Los Angeles, 330 P.2d 385 (Calif. 1958); 1 Antieau, Municipal Corp. §5.22 (1958, Supp. 1961). *But cf.* Ind. Stat. Ann. §53-758 (1951); KRS 100.072, 100.854(2)(b), 100.868; Md. Code Ann. art. 66B, §9A (Supp. 1961); 16 Pa. Stat. Ann. §2037 (1956); W. Va. Code §525ccc (1961). These statutes would probably uphold higher standards imposed by zoning ordinances so long as the state legislature did not intend to preempt the field in passing its regulation. The courts have not passed upon this question.

[278] KRS 100.850-.866, 100.868.

[279] For explanations of the Kentucky zoning enabling acts see, LRC, Planning and Zoning in Kentucky 21-44 (Research Rep. No. 11, 1962); Note, 48 Ky. L.J. 304 (1960).

master plan[280] for a rural Kentucky county would be difficult within itself. For a reasonable fee[281] the Division of Planning and Zoning of Kentucky will perform the professional planning and render the assistance necessary to qualify the county program for federal funds.

An effective county ordinance requiring compliance with a reclamation statute would cover the following points. (1) To protect its constitutionality this provision should be introduced by a statement of purpose which incorporates the policy provision of the state act or at least lists the injurious effects of strip mining without reclamation. Since the Ohio reclamation act contains no express policy statement, its counties could draft an excellent statement by combining the Kentucky and Illinois policy provisions.[282] (2) The ordinance should define its terms as they are defined in the reclamation statute. An additional term, "existing non-conforming use" should be defined since the zoning enabling acts of Kentucky, Illinois, Ohio, and West Virginia specifically prohibit elimination of non-conforming uses.[283] Strip miners will not be expected to challenge the ordinance since it would only require that they comply with a state law. However, those in the county at the time of its enactment and the holding companies owing mineral rights at that time may challenge the ordinance on the ground that their "existing use" extends beyond the acreage then being stripped or covered by their annual state stripping permits to all their mineral rights in the county. Determination of what constitutes a pre-existing use is made on a case-to-case basis. But if an operator or holding company can show expenditures made in contemplation of stripping a *particular* tract *beyond* those made in purchasing or leasing the right to strip, his use has a good chance of being protected as being in "existence" prior to the ordinance.[284]

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[280] KRS 100.854(2)(a), 100.868(1).

[281] The division has drafted model county zoning ordinances for Shelby and Woodford counties; neither are plagued by strip mines. It now provides such assistance to planning commissions in approximately fifty (50) Kentucky cities. The cost of this service is divided approximately as follows: local funds 25%, state funds 25%, and federal funds 50%. The local portion is determined on a per capita basis of $.15 for each city resident, $.10 for each county resident, and a minimum charge to the city of $500 and to the county of $350. In addition, a joint city-county commission receives a $.10 discount up to a total of $50.

[282] KRS 350.020 is quoted in parts in *supra* notes 141, 187, pages ..... Ill. Stat. Ann., ch. 93, §180.2 (Supp. 1961), is quoted *supra* note 151. Combination of these, of course, will require some modification. See the statement discussed in Merced Dredging v. Merced County, 67 F. Supp. 598 (N.D. Cal. 1946).

[283] Ill. Stat. Ann. ch. 34, §3151 (1960); KRS 100.854(2)(b), 100.868 (1960); Ohio Rev. Code Ann. §303.19 (1953); W. Va. Code Ann. §525ii (1961). 16 Pa. Stat. Ann. §2033 (1956) is *contra* in that it provides that non-conforming uses may be eliminated. See Note 49 Ky. L.J. 142 (1960); Comment, 45 Ky. L.J. 205 (1957).

[284] See, County of Du Page v. Elmhurst-Chicago Stone Co., 18 Ill.2d 479, 165 N.E.2d 310 (1960) (quarry); Hawkins v. Talbot, 248 Minn. 549, 80 N.W.2d

(Continued on next page)

However, if he can only show that he has purchased stripping rights in contemplation of extending his operations, he will probably not be protected.[285] Assuming this analysis is correct, the following definition is suggested:

> The existing non-conforming uses to which this ordinance does not apply include the following:
>
> . . .
>
> a strip mine in operation under a permit duly granted by the Strip Mine Reclamation Comm'n under KRS ch. 350 prior to and at the time the enactment of this ordinance [amendment] and which has not been abandoned subsequent to this enactment.

(3) The county should be zoned exclusively agricultural and the zoning officials should be given the power to grant, suspend, and revoke local permits to engage in strip mining. An adequate standard for such action could simply state:

> A permit to engage in strip mining shall be denied, suspended, or revoked whenever the applicant or permit holder fails, to show, upon five days' notice, that he has or will comply with KRS ch. 350 and regulations adopted by the Strip Mining and Reclamation Commn.

C. *State Severance Tax: A Possibility*

The states could impose a tax upon every ton of coal stripped and give the strip miner a tax credit for the amount he expends toward reclamation.[286] The tax should be based upon the approximate cost of reclamation required by the state's reclamation act. Even though the cost would vary, administrative necessities would probably require that the rate be uniform. A rate from $.03 to $.06 per ton would be reasonable.

In short, the tax would be imposed only upon those strip miners who did not comply with the state's reclamation requirements. The tax would supply funds for reclamation of certain spoils for which the

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(Footnote continued from preceding page)

863 (1957) (gravel pit). An analysis in Comment, 45 Ky. L.J. 205, 207 (1957), indicates that the three critical factors in determining if a use was "existing" are economic deriment to the individual, economic gain or loss to the public, and the nature of the use itself. A comparison made in 49 Ky. L.J. 142, 145 (1960) concluded that Darlington v. Board of Councilmen of City of Frankfort, 282 Ky. 778, 140 S.W.2d 392 (1940), indicated that "the Kentucky court will shield from zoning classifications a lesser degree of performance than will be protected in other jurisdictions."

[285] Mere adaptability for a particular use, contemplation of use, or a contract to construct the use generally are not held to be sufficiently "unequivocal" to be a "vested" existing use. 1 Antieau, Municipal Corp. §7.07 (1958); Note, 49 Ky. L.J. 142, 144 (1960). See, Town of Billerica v. Quinn, 320 Mass. 687, 71 N.E.2d 235 (1947) (loan stripping); Midland Park Coal & Lumber Co. v. Terhune, 136 N.J.L. 442, 56 A.2d 717 (1948) (coal yard); Davis v. Miller, 163 Ohio 97, 126 N.E.2d 49 (1955) (quarry); Comment, 45 Ky. L.J. 205 (1957).

[286] See, La Coste v. Department of Conservation, 263 U.S. 545, 552 (1924); Dufour v. Maize, 358 Pa. 309, 56 A.2d 675, 680 (1948); Rosenson, *The Power of a State Over its Natural Resources*, 17 Tulane L. Rev. 256 (1942).

state has no funds. These are the spoils created by the small, frequently-moving strip and auger operators who never apply for a permit much less post performance bonds. Any revenue received from operators who also posted bonds could be used to reclaim the thousands of acres stripped prior to the passage of the reclamation statutes.

D. *Miscellaneous Methods*

Landowners and various state officials have numerous other devices at their disposal which can be employed to further insure reclamation of spoils.

(1). Strict enforcement of certain state conservation acts other than the reclamation statute would help alleviate some of the destructive effects of strip mining. In Kentucky these would include the water pollution statutes.[287]

(2). Land owners in any strip mining district may petition for a local referendum to approve the formation of Soil Conservation Districts which may, among other things, adopt land use regulations concerning soil erosion which causes damage to other land within the district.[288] Any landowner, who sustains damages from a strip miner's violation of these regulations, could recover in a civil action.[289] Furthermore, subdivisions within these Soil Conservation Districts may be formed in any water shed area for the purpose of promoting and planning, among other things, control of flood, soil erosion and sediment damages.[290] The elected board of these Watershed Conservation Districts may levy an annual tax on real property within the district for construction and maintenance projects consistent with its purposes.[291] A watershed district has been created in Hopkins County, Kentucky to alleviate the swampy conditions of Clear Creek largely due to strip mining.[292] The 1962 Ky. General Assembly authorizes the creation of Mosquito Control Districts by local referendum which would have a similar taxing and spending power.[293]

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[287] KRS 220.550, 220.551, 220.560-220.570, 220.580-.990.

[288] Ill. Stat. Ann. ch. 5, §§106-138 (1941); Ind. Stat. Ann. §§15-1801 to 15-1818 (1950. Supp. 1961); KRS 262.090-262.600, esp. 262.350. Md. Code Ann. art. 66C, §§88-103 (1957, Supp. 1961); Ohio Rev. Code Ann. ch. 1515 (1954), Supp. 1961); Penn. Stat. Ann. ch. 3, §§831-48 (Supp. 1961); W. Va. Code Ann. §§2193(1)(14) (1961).

[289] *E.g.*, KRS 262.420.

[290] Ill. Stat. Ann.; KRS 262.700-262.795; Md. Code Ann. art. 25, §§169-218 (Supp. 1961); Ohio Rev. Code Ann. ch. 6105 (Supp. 1961); W. Va. Code Ann. §§2193(15)-2193(27) (1961).

[291] *E.g.*, KRS 262.745.

[292] LRC, Mosquito Control in Kentucky, p. 5 (Research Rep. No. 5, 1961).

[293] Ky. 1962 H.B. 122. See explanation of the need for legislation and the Advisory Comm's proposed bill in LRC, Mosquito Control in Ky., (Research Rep. No. 5, 1961).

(3). If royalty contracts contain a simple provision that the stripper comply with the state's reclamation act, royalties would not be reduced, the surface owners could sue on the contract if the strippers did not comply with the act, and the state's reclamation program would have an additional effective sanction. In the Ohio prairie many royalty contracts require the strip miner to leave pasture and cropland as he found it.[294] Those provisions cause the royalty to be slightly reduced, but the loss in surface value is avoided.

(4). Revision of county tax assessment procedure concerning strip mines would help reduce the threat to county revenues caused by the failure to reclaim spoils as discussed *supra*.[295] Apparently, because of the discretion vested in the county tax commissioners, there is no common policy among counties as to the assessment of land owned by strip mine interests.[296] Kentucky county tax commissioners are instructed to follow the *Kentucky Real Property Appraisal Manual* issued by the Ky. Dep't of Revenue in 1952. The *Manual* contains no instructions patricularly pertaining to land which has been stripped or set aside for stripping, but only outlines classification of rural lands in general. According to the *Manual*, rural lands are classified according to productive capabilities as determined by the character of soil, slope, erosion, and present land use.[298] If the revised edition of the *Manual*, which the General Assembly has ordered by July 1960, includes specific instructions on assessing these lands, some degree of uniformity will be attained. To be beneficial, these instructions must encourage reclamation and penalize strip miners who do not reclaim. As such, they could provide that assessment of land affected by strip mining since 1954 shall not consider loss in value due to failure to comply with the reclamation act.

CONCLUSION

This note did not attempt to evaluate the progress of reclamation in states other than Kentucky.[299] The Dep't of Interior has requested appropriations for a detailed study from which to make such an evaluation. In spite of the progress seven states may have made since 1939, if the reclamation programs of all twenty-six stripping states do not show remarkable progress within the next few years, federal

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[294] See *Better Farms from Stripped Lands*, 57 Coal Age 100 (March 1952); *Here's How You Can Return Strip Lands to Full Fertility*, 57 Coal Age 98 (Feb. 1952).

[295] See *supra* notes 62-81 and accompanying text.

[296] See *supra* notes 63, 64, 72 and accompanying text.

[298] Ky. Dep't of Revenue, Kentucky Real Property Appraisal Manual 35 (1952).

[299] See *supra* notes 239-73 and accompanying text.

legislation will pre-empt the field.[300] Some federal regulation may be inevitable, since the TVA apparently has evolved into a conflicts-of-interest situation. It was created primarily to further navigation, flood control, and electrical power in the Tennessee River Valley, but today it is one of the largest purchasers of stripped coal and has recently purchased stripping rights to 50,000 acres in Eastern Kentucky.[301]

Whether or not state reclamation programs achieve sufficient success to deter general federal regulation depends primarily upon the following factors:

(1) cooperation and leadership from the strip and auger miners,
(2) guidance and experimentation by the states' conservation agencies,
(3) advice given by lawyers to landowners as to reclamation provisions in royalty contracts and mineral severance deeds,
(4) enforcement of the seven existing mandatory reclamation acts and various other conservation legislation,
(5) enactment of mandatory reclamation by the legislatures of the nineteen other states,
(6) adoption of local sanctions for state reclamation acts in the form of county zoning ordinances and soil and watershed conservation districts,
(1) explanation of the purpose and necessity of reclamation in appellate briefs,
(8) favorable opinions from the highest state courts, and
(9) favorable editorials of the local newspapers in the strip mine areas.

Kentucky's reclamation program has been furthered by progressive state legislation and favorable editorials in state-wide newspapers. As for the nine sources listed above, it has received some contribution from only numbers (1), (2), and (4).

Whayne C. Priest, Jr.

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[300] See articles cited in *supra* note 4.
[301] See Caudill, *The Rape of the Appalachians*, 209 Atlantic Monthly 37 (April 1962).