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
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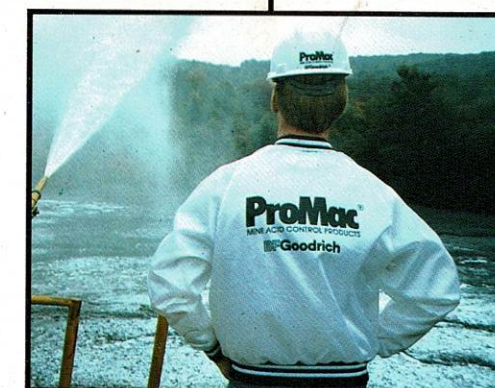
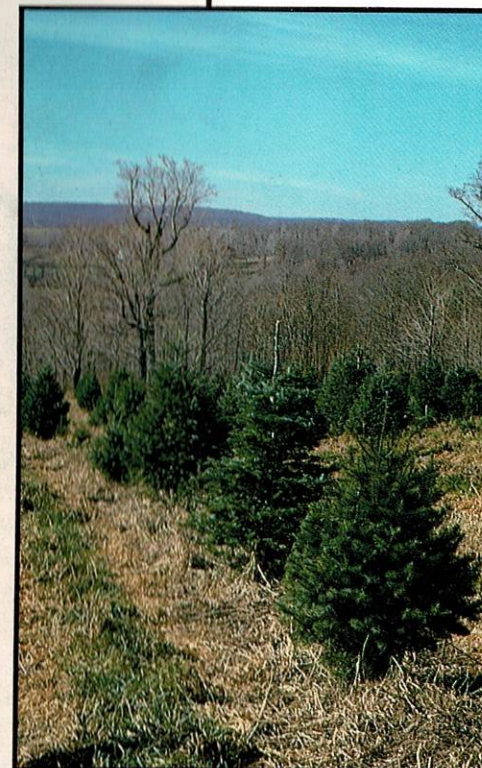
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Green Lands is a quarterly publication of the West Virginia Mining & Reclamation Association, with offices at 1624 Kanawha Boulevard, E. Charleston, West Virginia 25311 (304) 346-5318.



Our cover--From tennis courts to Christmas trees, the West Virginia coal industry and its people are diverse. For details, read this issue cover to cover.

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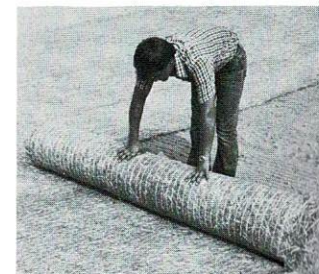


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Something for Everyone

WV Tax Reform Act of 1987

The West Virginia Tax Reform Act of 1987 will have far reaching effects on every citizen of the State, particularly its businessmen. House Bill 1693, was enacted in 1985, with an effective date of July 1, 1987. That bill was further changed by

Senate Bill 536 and Senate Bill 760, which passed this year.

The following overview is derived from in depth analyses provided by Louis Southworth, tax attorney for the Charleston law firm of Jackson, Kelly, Holt, and O'Farrell and West Virginia

Tax Commissioner Mike Caryl.

It is not our purpose in these pages to answer tax questions. A more likely benefit to the reader is that the article will generate questions which may be addressed by the reader's tax and financial advisors.

Business Franchise Tax

The Business Franchise Tax, which replaces the old B&O tax for most businesses, is imposed on the privilege of doing business in this State. Effective July 1, 1987, the tax is levied at .55% of the value of the tax base, or \$50, whichever is greater. The tax is levied on any activity within the state of a corporation or partnership which "enjoys the benefits and protection of the government and laws of this State."

Farming is exempted. Farming is extensively defined, and does not include timbering.

Sole proprietors, sole practitioners, and self employed persons are exempt.

Under certain conditions, exemptions are given to credit unions, trusts, credit associations, and federal tax exempt

corporations.

Tax credits are available for severance taxes, business investment and job expansion, for industrial expansion and revitalization, in some cases for research and development, and for some coal loading and coal coking facilities. Also, sales and use taxes paid may be credited to the business franchise liability. After July 1, 1988, B&O tax payment will be credited. The taxable year is the same as the taxpayer uses for federal income tax purposes. The tax return is due on the 15th of the 3rd month of the next succeeding taxable year. A declaration of estimated tax must be filed if the tax liability can reasonably be expected to exceed \$12,000 per year.

Corporate Net Income Tax

The Corporation Net Income Tax is imposed on the corporation's West Virginia taxable income as defined by federal law, and adjusted by West Virginia modifications.

While not new, significant changes were made with the passage of HB 1693, in 1985, and became effective July 1 of this year. However, SB 536, passed earlier this year, contains new changes, with the same effective date.

The two primary changes in SB 536 relate to adjustments in federal taxable income for bad debts and interest expense, and are of particular interest to financial institutions.

A new section allows, under certain conditions, severance, sales, and use taxes to be applied as a credit against this tax.

Severance Tax

"Upon every person exercising the privilege of engaging or continuing within this State in severing, extracting, reducing to possession and producing for sale, profit, or commercial use, any natural resource product or products there is hereby imposed a tax....."

The tax is basically applied to the gross value of coal production, at a rate of 3.85% on July 1 of this year, and increasing annually to a rate of 4.0% on "July 1, 1992, and thereafter."

Gross value is determined by the "market value," which in most cases, will be the same as the sale price.

However, for related party transactions, the gross value will relate to the fair market value, regardless of sale price. "Related parties" is defined as "two or more persons, organizations, or businesses owned or controlled directly or indirectly by the same interests."

The "Stiles Amendment," proposed by Delegate Floyd Stiles (R-Preston), deleted the imposition of the severance tax on stockpiled coal.

That is, the tax will not be levied until the coal is sold or consumed. If stockpiled coal is not consumed, the gross value will be equal to the fair market

value.

Coal imported to West Virginia for processing and resale is also taxed on the difference in the fair market values of the mineral before and after processing. In general terms, this means an additional tax on the gross profit of the processor.

This same principle applies to severed coal purchased within the state for processing and resale. In this case, the same tonnage would be "severance taxed" twice, once on being mined, and again on being processed, reflecting respective values.

Use Tax

The Use Tax is imposed on the use of property which is not subject to the Sales Tax.

Under Senate Bills 536 and 760, the Use Tax now applies to services, as well as products. The new bill also expands the application of the tax by applying it to the in-state use of out-of-state taxable services.

The exemption for machinery, supplies and material used by certain businesses is eliminated. However the specific exemptions which formerly applied to the Sales Tax are now applicable to the Use Tax. Gasoline and special fuels are taxable..



The Use Tax will be administered in the same fashion as the Sales Tax, and is considered a "companion tax" to the Sales Tax.

Carrier Income Tax

A new section allows deductible sales and use taxes to be applied as a credit against this tax. Such credit is allowable only for purchases made after June 30, 1987. According to Commissioner Caryl, this "effectively repeals the carrier income tax as of July 1, 1987, for carrier business done on or after that date."

All carriers must file, by September 15, an annual return for the carrier tax year ending June 30, 1987. This applies regardless of when the carrier's current federal taxable year ends.

The West Virginia Tax Reform Act

Personal Income Tax

Senate Bill 536 is intended to return to state taxpayers the anticipated income tax revenue windfall to the State created by federal income tax reform. In its final form SB 536 broadly reformed the personal income tax system, with dramatic reductions of the top personal income tax rates, and a general broadening of the tax base through the mechanism of limiting deductions and modifications to income.

The changes apply retroactively to the beginning of 1987.

The previous 24 tax brackets for personal income have been reduced to five. The range of rates prior to SB 536 was from 2.1% to 13%. The lowest rate is now 3%; the highest is 6.5%. The following rate structure applies regardless of filing status:

First \$10,000	3.0%
Next \$15,000	4.0%
Next \$15,000	5.0%
Next \$20,000	6.0%
Over \$60,000	6.5%

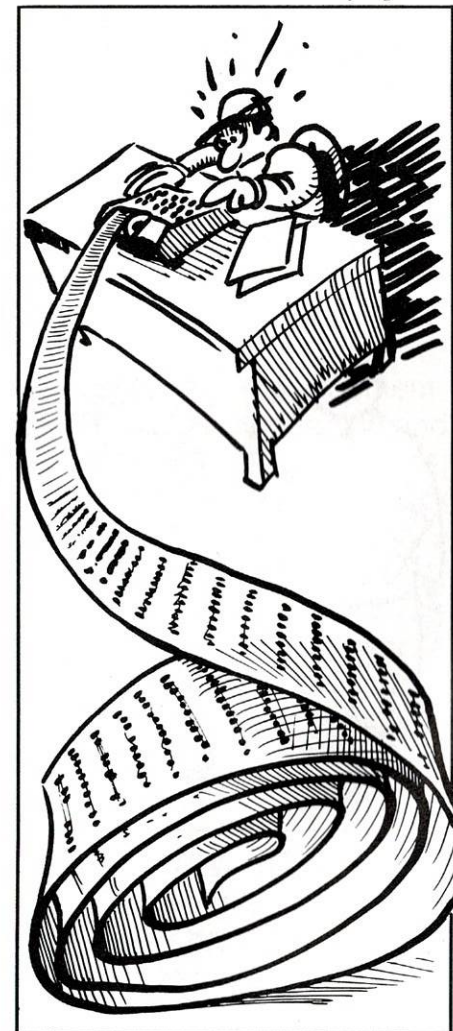
Due to the uniformity of rates as regards filing status, the option of spouses filing a joint federal return, and separate state returns is effectively repealed.

The amount of each personal exemption is increased

from \$800 to \$2000. Widows and widowers are granted an additional personal exemption for two years after the spouse is deceased.

That's the good news. On the other side:

SB 536 eliminates the West Virginia standard deduction as well as itemized deductions. West Virginia taxable income will consist of the taxpayer's



federal adjusted gross income, less West Virginia personal exemptions.

Included among the common deductions lost to West Virginians are 1) union dues 2) home mortgage interest 3) real and personal property taxes

4) charitable contributions 5) medical expenses 6) consumer interest and 7) sales tax.

Income exemptions for various retirement, death, and disability benefits have been severely restricted. Basically the exemption is limited to \$2000 received from public retirement systems, including military. Only one \$2000 deduction is allowed regardless of the number of retirement systems from which the taxpayer receives benefits.

Full deduction is retained for pensions and annuities for police and firemen, who are not covered under social security. Persons permanently and totally disabled, and persons over age 65 will be allowed a total deduction of \$8,000, which includes the \$2000 deduction described above.

The \$4000 deduction for persons on active military duty has been repealed. In conforming with federal law, the extra exemption available to blind persons and persons over age 65 has been repealed.

Sales Tax

For years, businesses in West Virginia have enjoyed a broad exemption from state sales taxes. This exemption was almost automatic for those licensed to do business in West Virginia.

However, that will no longer be the case. The passage of Senate Bills 536 and 760 introduced a new concept of taxation to the state's business community. That concept was one of placing the 5% sales tax on equipment, goods and services purchased by businesses. The published intent was elimination of sales tax evasion in West Virginia. Not much was said about another purpose, that of raising additional revenue for the State.

The two separate laws (SB 536 & 760) set forth the concept of "direct use" as determining the taxability of equipment, goods and services purchased by businesses. Generally, businesses in West Virginia will pay the five percent consumer sales tax on anything purchased which is not "used or consumed directly" in the business. While the code sections make a few references to what "direct use" actually is or is not, the voluminous regulations go into great detail to make the distinctions.

This new concept of taxation went into effect on July 1, 1987 and affects all purchases made on or after that date. It will mean a major transition for the

state's businessmen and it will mean a number of administrative "nightmares."

The legislation contains several items which are of critical importance to the coal and coal-related industries of West Virginia.

The first is commonly referred to as the "subsection (v)" issue. That is a reference to a specific subsection in the code. It directly relates to those businesses which will continue to pay gross receipts tax after July 1 (other legislation repealed the old B&O tax for most businesses on July 1). The coal industry, as well as other extractive industries, will continue to pay such a gross receipts tax. The difference, as of July 1, is that it is now referred to as "severance tax", rather than "B&O tax."

In recognition of the impact of continuing to pay gross receipts taxes, the legislature continued the broad exemption for those businesses. That recognition was justified since most businesses realized a benefit from removal of the "B&O" gross receipts tax. Subsection (v) specifies that purchases made by businesses continuing to pay gross receipts tax, will be exempt from sales tax for purchases made in conjunction with the activity on which gross receipts taxes are paid. In other words, the "direct use" test will not apply to these businesses, as long as it is tied

to the gross receipts tax liability.

If that was the extent of the changes, it would be relatively simple. Of course, that is not the total extent. Substantial record keeping and documentation will be necessary to insure that purchases are truly exempt.

Direct Pay Permits are a new form which is necessary if a company is to avoid paying sales tax at the time of purchase. It must be filed with the Tax Department, along with a list of your vendors. It then relieves the company from paying the tax and the vendor from collecting it at the time of purchase. It does exactly as its name implies, it enables the company to pay any tax owed directly to the Department.

Every business is encouraged to obtain such a permit. It gives a person, or company, more control of their money. The permit holder determines whether or not the purchases are taxable and submit that amount of money. The alternative is to pay the tax, at the time of purchase, and seek a refund from the State or a credit against another state tax.

This six digit number is assigned by the Department and it is not the same as the federal ID number. Only this six digit number is used for direct pay purposes. With it, the taxpayer must account to the Department, on the 15th day of the month, for purchases made the previous month. This is done in gross figures, not detailed descriptions. From that, determine the amount of purchases subject to the 5% sales tax and pay the amount direct.



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Recommendations

Fertilizer for Minesoils

by Dr. Jeff Skousen
Extension Specialist-Land Reclamation
West Virginia University

A common question asked by coal operators and revegetation specialists in the spring is "How much fertilizer should be added to my minesoil to maintain productivity?" Another question often asked is "How are fertilizer recommendations made?" In order to answer these questions, we must consider:

- 1) proper minesoil sampling techniques;
- 2) laboratory and analytical procedures for determination of the nutritional status of the soil;
- 3) processes for interpretation and correlation of the results to make a fertilizer recommendation; and
- 4) practices for application of appropriate rates of fertilizer.

Proper Sampling

The purpose of sampling minesoils is to gather information concerning the physical and chemical properties of the minesoil. This information can then be used to aid revegetation efforts. Therefore, a good sample is the first criterion for a reliable soil test.

The most important factor to consider when taking a sample is to make sure the sample is representative of the area for which information is needed. Minesoils are highly variable in many

properties. Rather than taking one sample from one location to represent a large area (e.g. one sample for ten acres), better results will be obtained by taking smaller samples in several locations (e.g. ten samples across this ten acre area). The samples are combined to produce a "composite" sample. During laboratory preparation, the composite sample is dried, ground, and mixed. Subsamples are taken from the composite sample for laboratory analyses. The composite sample generally will more accurately represent the minesoil properties of the area more than just one sample from a single location.

Sometimes visual symptoms may identify small areas that require separate sampling. Such symptoms may be abrupt changes in soil texture or color, smells, or odors, and changes in vegetation, or no vegetation. These areas with obvious observable problems should be sampled separately to ascertain their properties.

Soil samples extracted for analysis to determine fertilizer recommendations should be taken to a depth of 6 to 10 inches, placed in plastic bags, properly labeled, and sent to a laboratory as soon as possible. When rock fragments are present in the minesoil, sieve or remove the fragments so that the sample contains predominately fine earth material (discard any hard rock fragments larger than 1/2 inch in diameter).

Fertilization helps maintain ground cover and productivity on minesoils. Note the differences in the color, height, and density of this tall fescue pasture that was fertilized on the right, but not on the left.



Laboratory Procedures, Results and Interpretations

Once the sample has been collected and prepared, procedures to extract the amount of available nutrients must be conducted. Many methods have been developed for extracting elements from soils and different procedures are used depending on the laboratory.

Nitrogen and phosphorus levels commonly limit productivity on minesoils. Nitrogen can exist in many forms (N O3-, N H4+, N O2, N O, N H3, etc.) and is readily transformed by chemical or biological processes. For this reason, many laboratories do not test for nitrogen, but use a standard nitrogen recommendation based on the crop grown.

Nitrogen recommendations for minesoils are shown in Table 1 for different post-mining land uses.

In some cases, it may be beneficial to apply the nitrogen in split applications: half of the amount in the spring and the other half in the fall.

Measuring phosphorus availability in soils is one of the most difficult problems soil testing laboratories face. The amount of plant-available

Table 1: Nitrogen recommendation for revegetation of surface mined lands during first year establishment of the vegetation and during maintenance periods.

Land Use	Pounds Per Acre	
	Annual Rate for Vegetation Establishment	Annual Rate for Vegetation Establishment
Grass-Legume Mix	50	0-40*
Grass-Annual Grain	60-75	50
Wildlife Plantings	50	50
Commercial Trees	50	50

*If legumes are well established, and make up approximately 50% of the stand, nitrogen fertilizer additions for maintenance of vegetation may be reduced or unnecessary.

phosphorus is usually determined by one of three methods. First, the Double Acid Extraction procedure utilizes H C1 and H2 S O4, and is used on humid, acid soils in the eastern U.S. Second, Bray P-1 is an acid extractable method which uses N H4 F and H C1, and was also developed for humid, acid soils. Third, the Bicarbonate Method uses sodium or ammonium bicarbonate and was developed for humid, calcareous soils. All three tests are relatively good indices of plant-available phosphorus.

Fertilizer Recommendations for Minesoils

Table 2: Interpretation of results for phosphorus tests

Interpretation	Soil Test Results in Pounds/Acres*		
	Double Acid	Bray P-1	Bicarbonate
Very Low	0-10	1-10	0-5
Low	11-25	11-25	6-10
Medium	26-50	26-50	10-30
High	51+	51+	31+

*If the soil test results come back in parts per million (ppm), ppm can be converted to pounds/acres easily. Parts per million x 2=Pounds/Acre. (An "acre" of soil is equivalent to an acre of soil which is six inches deep. This volume of soil weighs approximately 2,000,000 pounds or 1000 tons.)

Table 2 shows interpretations for each of these three types of phosphorus tests.

Most minesoils have adequate levels of potassium, calcium, and magnesium when the pH is 5.5 or greater. However, a soil test may reveal that one of these important nutrients is not sufficient for normal plant growth (especially if the land has been intensively managed or cropped). These nutrients are normally extracted by the Double Acid Extraction procedure, using H C1 and H2 S O4. Other laboratories may use the Ammonium Acetate method. Most laboratories will provide their clients with information concerning the methods they use for soil testing and extraction of plant nutrients.

Table 3 shows interpretations for Double Acid extractable amounts of these three nutrients.

Recommendations

Minesoil fertilizer recommendations are based on experience and correlative research. Approximately 50 to 60 pounds per acre of nitrogen is recommended to assure proper growth of most plants used for revegetation. Phosphorus should be added to raise the available level to 50 pounds per acre. However, legumes and some other plants may require up to 100 pounds per acre of phosphorus for optimal growth. At least 100 pounds per acre of potassium is recommended for adequate plant growth on minesoils. These values are the amounts or levels of nitrogen, phosphorus, and potassium that are recommended to maintain adequate ground cover and productivity. If the soil test reveals lower levels of these nutrients in the minesoil, appropriate rates of fertilizer should be applied to meet these target levels.

Table 3: Interpretation of results for potassium (K), calcium (Ca), and magnesium (Mg) by the Double-Acid Extraction method.

Interpretation	Soil Test Results in Pounds/Acres*		
	K	Ca	Mg
Very Low	0-30	0-500	0-50
Low	31-60	501-1000	51-100
Medium	61-120	1001-2500	01-250
High	121-240	2501-4000	251-500
Very High	241+	4001+	501+

*See footnote for Table 2.

Practices

Once the fertilizer recommendation has been made, it is up to the land manager to apply the right amount of fertilizer. The fertilizer grade refers to the guaranteed nutrient content of the fertilizer in terms of nitrogen, phosphorus pentoxide (P₂ O₅), and potassium oxide (K₂ O). For example, 10-10-10 fertilizer has 10 percent N, 10 percent P₂ O₅, and 10 percent K₂ O. Or, in other words, each 100 pound bag of 10-10-10 has 10 pounds each of N, P₂ O₅, and K₂ O. P₂ O₅ is 44 percent phosphorus, while K₂ O is 83 percent potassium. Other common complete fertilizers are 17-17-17, 19-19-19, 10-20-20, 12-24-24, etc. There are many other grades of fertilizers such as 16-0-0, 34-0-0, 0-46-0, and 0-0-60.

Example

The soil test reveals that 50 pounds of N, 30 pounds of P, and 80 pounds of K, are needed to reach nutrient target levels on a particular mine-soil.

Using 10-10-10, 500 pounds per acre would meet the N requirement, but would only provide 22 pounds per acre of P ($500 \times .10 \times .44 = 22$) and 41.5 pounds per acre of K ($500 \times .10 \times .83 = 41.5$).

Using 10-20-20, the N, P, and K requirements are met.

N = $500 \times .10 = 50$ pounds per acre

P = $500 \times .20 \times .44 = 44$ pounds per acre

K = $500 \times .20 \times .83 = 83$ pounds per acre

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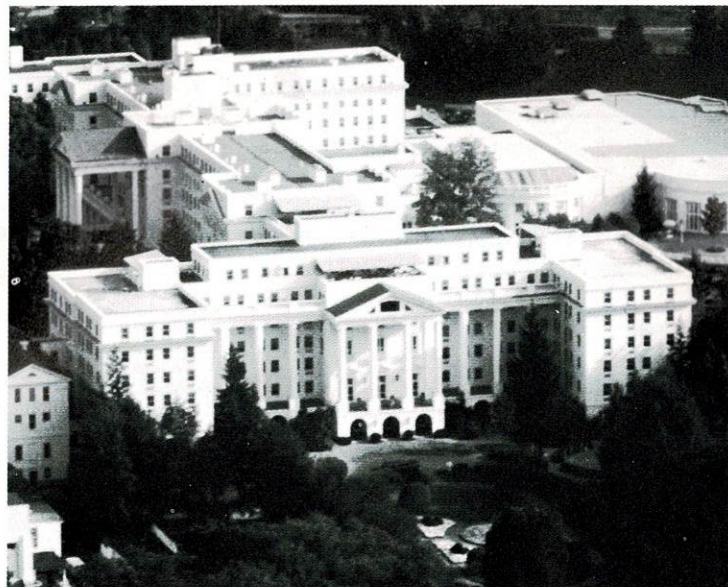
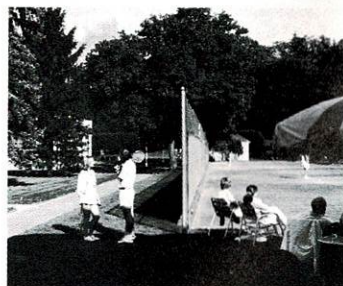
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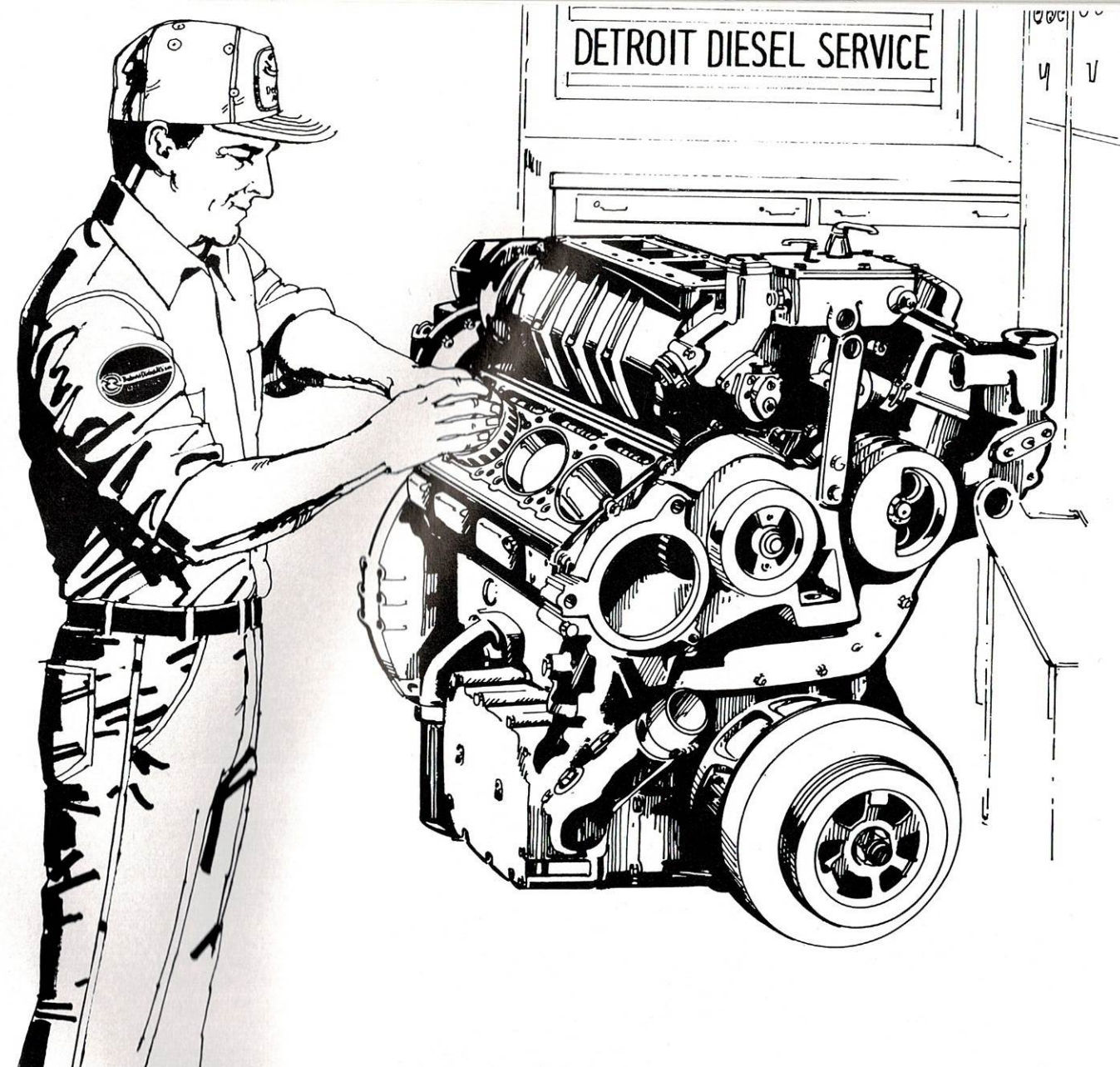
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Carl Burgess with bundled Christmas trees ready for the Washington, D.C. market.

The Christmas Plantation

While most folks in the eastern U.S. swelter on ball fields and golf courses, or head for the beaches, Carl Burgess of Keyser, West Virginia is taking care of business—Christmas business, no less.

Like another gentleman located further to the north, Christmas is a year round affair

for Carl Burgess. He's in the business of growing yuletide trees—Douglas Fir, Frazer Fir, Balsam Fir, Scotch Pine, White Pine, and a few Spruce.

Mr. Burgess moved to Keyser back in 1957, following a 32 year career with the U.S. Postal Service in Washington, D.C. At age 50, he started a second

career, a "Christmas tree plantation" near Hartmansville in Mineral County.

Thirty years later, at 82 years of age, he has 300,000 trees planted, and a large market in Baltimore, Washington, Richmond, Charleston, and other cities along the mid-Atlantic seaboard.

Reclamation by Allegheny Mining Corp.

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Allegheny, the winner of sev-

eral reclamation awards, is particularly adept at land restoration.

The company's excellent reclamation work on this site, combined with the use of herbicides to control vegetation near the trees, has made the mined and unmined tracts of lands indistinguishable halves of Carl Burgess's Christmas tree plantation.

Various species of firs are a big favorite as Christmas trees. Allegheny's operation can be seen in the background.



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Hobet's award winning job is this 1000 acre site in Boone County.

Hobet Wins National Honors

Hobet Mining Co. is the recipient of an honorable mention award in the First Annual "Excellence in Surface Coal Mining Reclamation National Competition," sponsored by the U.S. Department of the Interior.

Interior Secretary Donald Hodel made the presentations

last month at the National Coal Association Convention in Chicago.

Four award winners and four honorable mentions were selected from among 3000 companies considered for the honor.

Hobet's 1000 acre site in

Boone County was the official West Virginia entry, having been nominated by the State Department of Energy.

One of the four winners was WVMRA member Buffalo Coal Co., of Bayard, which was recognized for its operations in western Maryland.



WV Energy Commissioner Ken Faerber (l) recognizes Hobet Mining Co. as the West Virginia entry in national reclamation award competition. Accepting for Hobet is company President Ken Woodring.



Accepting Hobet's award in Chicago from OSM's Jed Christensen (l) and Secretary Hodel (r) are Ashland Coal, Inc. Vice President Dave Todd, Ashland President John Kebblish, and Ruth Sullivan, manager of Public Affairs for Hobet..

Other Winners From WV



Buffalo Coal Co., long recognized for its outstanding reclamation work in West Virginia, won a major award for its western Maryland operations. From left to right are Carmen DelSignore, Melvin Judy, Don Cussins, Tony Abar of Maryland DNR, and Secretary Hodel.



North American Coal Corp. won for its project in Belmont County, Ohio. Shown with Jed Christensen and Secretary Hodel are North American President Bob Murray, and Bruce Krantz, who cut his reclamation teeth with Valley Camp Coal in West Virginia, before moving to Ohio.



Bob Martin checks the progress of patchwork prior to resurfacing.

Coal Company Turns to Tennis

Bob Martin has given new meaning to the word surface. In the surface mining industry, there's always the post mining land use to consider, and recreational use is usually a viable option.

These days, however, Bob is skipping the mining part of the process, and going right to the recreation.

West Virginia Recreational

Contractors, Inc.—that's the name of Bob Martin's new company. And it's changed his professional life. He no longer applies for a permit to do his surface work. And rather than measuring his job in acres, he concentrates on about one-sixth of an acre at a time.

The former president of Glenhayes Coal Terminal, Inc. is now in the business of resur-

facing tennis courts, and he's pretty happy about it.

This turn of events came about almost by accident. "We had an opportunity to buy a company in Atlanta that does this kind of work," recalls Martin. "I made the decision to go ahead, and had a couple of jobs lined up before the deal closed.

"Literally at the last minute, the seller backed out, but we



The near finished product, as former Glenhayes miners put down the lines.

'... we had these commitments to work on tennis courts, ...'

had these commitments to work on tennis courts, so I decided to go ahead with my own company."

Bob persuaded a reluctant work force of coal miners to join him "on the courts," and now business is booming.

"We've really got all the work we can handle, and it looks like we'll have to expand."

Was it difficult getting bull-

dozer and loader operators to spend their days patching asphalt and painting white lines?

"I had to promise them we'd only do the first batch that I'd committed to," recounts Martin with a knowing smile. "I kind of eased them into it gradually."

"By the time, we had finished the second batch of courts, they had adapted pretty well, and now I think everybody's happy

with it."

Converting coal producers to tennis court resurfacers is definitely not a trend that would be wise to promote on a large scale. But the transition from Glenhayes Coal to West Virginia Recreational Contractors proves again the tremendous resiliency and staying power of West Virginia coal operators.

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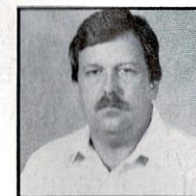
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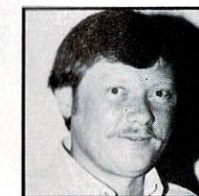
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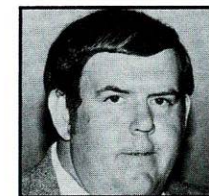
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Seminar Certifies West Virginia's Blasters

Industry 'self-training' proves successful

The Association's Blaster Certification Sessions, held in mid-May at the Holiday Inn, Charleston House, were a huge success by any measure.

The State of West Virginia may not have any more expert blasters than it had before the sessions, but it does have some 125 additional "certified" shooters, thanks to the two day



Steve Cvechko, Johnstown Coal Co., Don Rapp of Dupont, Mack Scaggs of Elk Run Coal Co., and Don Woodward of Mt. State Bit Service practice the wiring procedure on the test board.

training and testing sessions.

The issue of blasters' certification is as old as the Surface Mining Control and Reclamation Act. After nearly ten years of bureaucratic wrangling, "emergency" regulations were finally issued in January of this year, requiring that all persons responsible for the supervision of storage, detonating, record

keeping, and other aspects of the blasting operation, be duly certified by January 8, 1988.

As conceived by Association Vice-President Bill Raney, the idea behind the certification sessions has been to get the industry's blasting experts approved with a minimum of fuss and paperwork.

Each applicant underwent a day of training from DoE approved examiners, followed by a three part exam. During the training period, applicants were photographed, and paperwork was screened for correctness and completeness. Tests were graded immediately, which allowed for retesting where necessary.

As a result, each applicant walked out of the Charleston House as a certified blaster, thus avoiding what could have been a tedious and expensive process.



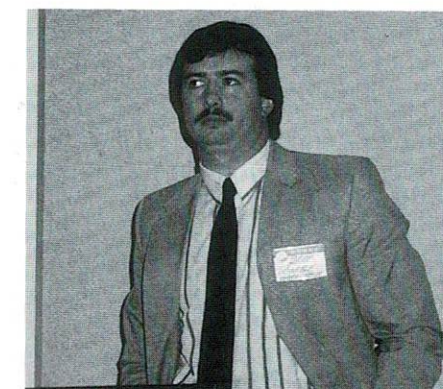
Left to right-Tom Cochran, Kester Kennedy, Tom Lewis, and Herman DeProspero of Austin Power Co.



Joe Ferguson, Independent Explosives Co., Charleston, "Timing,"



Jim Dick, E.I. DuPont De Nemours & Co., Charleston, "Blast Dimensions and Calculations."



Mark Trimble, VIBRA-TECH Associates, Scott Depot, "Preblast Surveys, Ground Vibrations, Air Blast & Fly Rock."

The Instructors



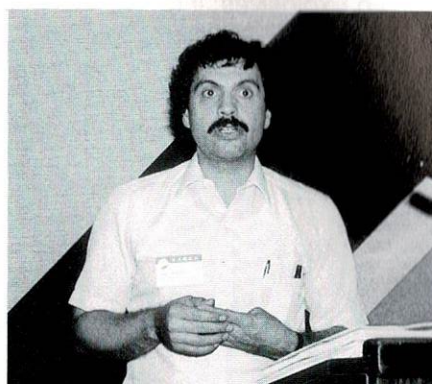
Roy Cole, Lilly Explosives, "Blasting Equipment and Supplies."



Joe Folio, Explosives, Inc., Clarksburg, "Storage and Handling."



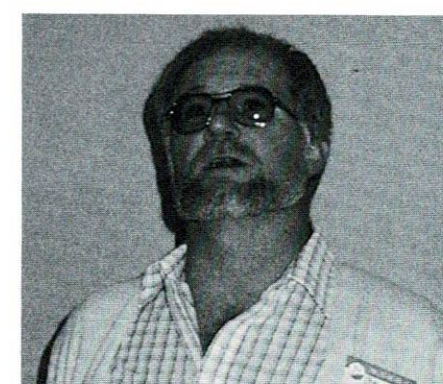
Don Rapp, E.I. Dupont De Nemours & Co., Daniels, "Delay Systems."



Larry Mirabelli, Mt. State Bit Service, "How to Take the Test."



Russ James, East Kentucky Explosives, West Prestonsburg, Ky., "Storage and Handling."



Bruce Wood, West Virginia Explosives Co., Glen Morgan, "Properties and Types of Explosives."

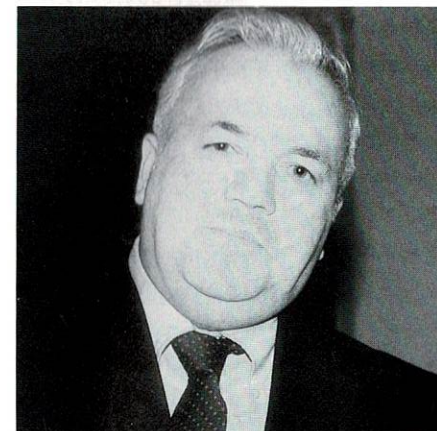
The following individuals were duly certified as blasters following the Association's Training and Testing sessions. Congratulations to them.

Walter Akers-Triad Mining Co.
Harold R. Arbaugh-High Power Energy
Jim Atkinson-Bridgeport Mining
Jack D. Ball-Templeman Construction Co.
John Beckman-Appalachian Explosives, Inc.
Tim Bellamy-High Power Energy
Leonard G. Beverage-D&L Coal Co.
Jeff Bitzer-Ford Coal Co.
Michael J. Burrell-Ensign Bickford Co.
Zenas Campbell-Ford Coal Co.
Dan Clay-Ford Coal Co.
Bernard Cline-Bluestone Coal Corp.
Tom Cochran-Austin Powder Co.
Billy Collins-High Power Energy
Tim Condee-Peabody Coal Co.
Robert Condee, Jr.-Peabody Coal Co.
Calvin Copeland-Freeman Branch Mining
Gary Cowger-Grafton Coal Co.
Harold Crane-Leckie Smokeless Coal Co.
Gary Currence-Leckie Smokeless Coal Co.
Henry Damron-Triad Mining Co.
Gary Dietz-Leckie Smokeless Coal Co.
Thomas Dove-Logan County Airport Contractors
Raymond Dymond-Princess Susan Coal Co.
John Ellis-Princess Susan Coal Co.
Gary Ellis-Princess Susan Coal Co.
Ken Ellis-Ford Coal Co.
Charles Evans-Omar Mining Co.
Darrell Ewing-Elk Run Coal Co.
Joe Ferguson-Triad Mining Co.
David Ferrell-Ferrell Excavating
James Ferrell-Ferrell Excavating
Bernard Firzpatrick-G&M Coals
Steven E. Fizer-Mountaineer Explosives, Inc.
Gary Ford-Ford Coal Co.
Danny H. Furr-Copen Coal Co.
Rick Givens-Freeman Branch Mining
John Goldstrom-Patriot Coal Co.
Jerry Good-Ford Coal Co.
Tom Hagy-Leckie Smokeless Coal Co.
Ralph Hall-Logan County Airport Contractors
Paul Harold-High Power Energy
William E. Harper, Jr.-Bedcor, Inc.
Larry Henry-Clarion Powder
John Hess-Valley Camp Coal Co.
Tiff Hilton-Leckie Smokeless Coal Co.
William B. Hogan-Beckley Stone Co.
Kermit Holiday-Leckie Smokeless Coal Co.
Lee Horrocks-High Power Energy
Jennings Hughart-Leckie Smokeless Coal Co.
William Hull-Grafton Coal Co.
Steve Igo-Valley Camp Coal Co.
Nixon Jackson-Kimberly Industries, Inc.
Bill Jordan-Triad Mining Co.
Davis Edwin Kennedy-Victory Mining Co.
Troxell Keplinger-WOCAP Research/Engineering
William M. Kimble-National Construction Co.
Ted Lambert-Triad Mining Co.

James Edward Lester-Lynn Land Co.
Ernest Lilly-Lillybrook Coal Co.
Oris Lilly-Ford Coal Co.
Earl Loudermilk-Leckie Smokeless Coal Co.
Kenneth Lowther-Grafton Coal Co.
Robert Lyons-Brooks Run Coal Co.
Aaron Martin-Peabody Coal Co.
Dale K. Mathena-G.E. Ray Construction Co.
Charles D. May-Lynn Land Co.
David Maynard-Taywood Mining, Inc.
Douglas McComas-Old Hickory Coal Co.
Dave McDorman-High Power Energy
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Jerry Phillips-Barbour Coal Co.
Charlie Phipps-Leckie Smokeless Coal Co.
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Preston Shimer-Kimberly Industries, Inc.
Ronnie Slone-Triad Mining Co.
John Smith-Bedcor, Inc.
Greg Smith-Harris Powder Co.
Pete Speck-Freeman Branch Mining
Joseph Z. Stalnaker-Grafton Coal Co.
Don B. Stewart, Jr.-Omar Mining
Ireland Sutton-Valley Camp Coal Co.
Terry Tolley-Ford Coal Co.
Sherman Tomblin-Colony Bay Coal Co.
Steve Wellman-Ferrell Excavating
Denny Williams-Peabody Coal Co.
George Wilson-Taywood Mining, Inc.
Jim Wolfe-Ford Coal Co.
Dale E. Wright-Bluestone Coal Corp.

Association Notebook

NCA Elects Three WVMRA Members to Board



Don Cussins



Dwight Keating

Three members of WVMRA have been elected to the Board of Directors of National Coal Association (NCA).

They are Dwight Keating, vice-president of Five-J Energy Co., Clarksburg, and a former WVMRA Board Chairman, Bob Gibson, president of Princess Susan Coal Co., Charleston, and Don Cussins, president of Buffalo Coal Co.

NCA, which recently incorporated with the Mining and Reclamation Council (MARC), is the largest coal organization in the U.S.

Management Changes at C.I. Walker

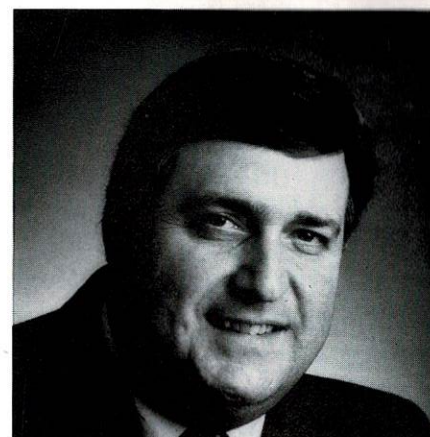
John C. Williamson has been appointed vice-president of Sales for C.I. Walker Machinery Co.

Williamson joined the company in 1974, and most recently served as vice-president of the Walker Lift Division.

In his new post he will fill the

vacancy left by the election of Frank W. Vigneault to the position of senior vice-president.

Frank Vigneault, a longtime key member of WVMRA and chairman of the Associate Division, has been with Walker since 1954, and was vice-president of Sales for 15 years.



John C. Williamson



Frank W. Vigneault

Association Loses Two Good Friends

The Association lost two longtime friends and staunch supporters recently with the passing of Andy Chandler and Bob Long.

Andy died on May 16, after a long illness. He was president of Crown Hill Equipment Co., and had been a member of WVMRA since 1972.

Bob passed away suddenly on July 13. He was the retired president of Hawk's Nest Mining Co., and a longtime member of our Board of Directors.

COAL CALENDAR

AUGUST

3-5 Fifth Annual "Longwall Mining" Conference, Holiday Inn, Morgantown, contact Department of Mining Engineering, WVU, Box 6070, Morgantown, 26505, (304) 293-0111.

3-5 "Technical Elements of Surface Coal Mining and Land Reclamation," University Park, Pa., contact R.L. Frantz, Penn State U., University Park, Pa., 16802, (814) 865-7472.

5-7 Computer Modeling Simulation Model for Underground Coal Mine Planning, University Park, Pa., contact R.L. Frantz, Penn State U., University Park, Pa., 16802, (814) 865-7472.

6-7 Fourth Annual "Surface Subsidence Engineering" Conference, Holiday Inn, Morgantown, contact Department of Mining Engineering, WVU, Box 6070, Morgantown, 26505, (304) 293-0111.

6-9 Annual Meeting, West Virginia Mining & Reclamation Association, The Greenbrier, White Sulphur Springs, contact Patty Bruce, WVMRA, 1624 Kanawha Blvd. E., Charleston, 25311, (304) 346-5318.

10-12 "Ventilation Network Analysis Using Microcomputers," 120 White Hall, WVU Downtown Campus, Morgantown, contact Department of Mining Engineering, WVU, Box 6070, Morgantown, 26505, (304) 293-0111.

13-15 "West Virginia Groundwater '87: Status and Future Directions," West Virginia University, contact WVU Conference Office, 67 Towers, West Virginia University, Morgantown 26506, (304) 293-2495.

SEPTEMBER

2-5 Joint Annual Meeting, West Virginia Chamber of Commerce and the West Virginia Manufacturers Association, The Greenbrier, White Sulphur Springs, contact WV C of C, P.O. Box 2789, Charleston 25330, (304) 342-1115, or WVMA, Suite 414, 405 Capitol St., Charleston 25301, (304) 342-2123.

9-11 "Mine Management Information Systems," Holiday Inn, Morgantown, contact Department of Mining Engineering, WVU, Box 6070, Morgantown, 26505, (304) 293-0111.

13-16 Annual Convention of the American Mining Congress, Hilton & St. Francis Hotels, San Francisco, Ca., contact AMC, 1920 N St. NW, Washington, D.C. 20036, (202) 861-2800.

14-18 "Professional Engineer Exam Review in Mining/Mineral Engineering," Holiday Inn, Morgantown, contact Department of Mining Engineering, WVU, Box 6070, Morgantown, 26505, (304) 293-0111.

16-18 Bluefield Coal Show, Brushfork Armory Civic Center, Bluefield, contact Charles A. Peters, Greater Bluefield Chamber of Commerce, P.O. Box 4098, 619 Bland St., Bluefield, 24701, (304) 327-7184.

21-24 Annual Meeting, Interstate Mining Compact Commission, Mills House Hotel, Charleston, S.C., contact Kenes C. Bowling, IMCC, 1364 Devonport Drive., Lexington, Ky. 40504, (606) 253-1576.

21-25 "Review Course for the Professional Engineering Examination of Mining/Mineral

August 6-9 Annual Meeting, WV Mining & Reclamation Assoc.
The Greenbrier, White Sulphur Springs, contact WVMRA, (304) 346-5318.

Engineers," University Park, Pa., contact R.L. Frantz, Penn State University, University Park, Pa., 16802, (814) 865-7472.

24-25 Maryland Coal Association, Fourth Annual Coal Symposium, The Wisp Resort, Deep Creek Lake, Md., contact Sue Gaumer, MCA, 59 E. Main St., Frostburg, Md. 21532 (301) 689-6609.

28-29 "Modern Strata Control," University Park, Pa., contact R.L. Frantz, Penn State University, University Park, Pa., 16802, (814) 865-7472.

OCTOBER

8-10 Annual Meeting, Kentucky Coal Association, Hyatt Regency Hotel, Lexington, Ky., contact Tom Duncan, KCA, 340 South Broadway, Lexington, Ky. 40508 (606) 233-4743.

12-13 Regional Meeting, Society of Mining Engineers, Sheraton Station Square Hotel, Pittsburgh, Pa., contact Darline Daley, Society of Mining Engineers, Inc., 8307 Shaffer Parkway, P.O. Box 625002, Littleton, Co. 80126, (303) 973-9550.

12-14 Third U.S. Mine Ventilation Symposium, Keller Conference Center, Penn State University, contact Jan M. Mutmanský, 120 Mineral Sciences Bldg., Penn State University, University Park, Pa. 16802, (814) 863-1643.

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Figure 1. Aerial photo of the award winning Norton site in Randolph County.

Controlled release bactericides Contribute to award winning site

by Vijay Rastogi, Business Manager, ProMac Systems
and Ronald J. Bohac, Marketing Manager, ProMac Systems
The BFGoodrich Co., Brecksville, Ohio

Background

Pat Park, Dave Brochart, and Dave Pybus of the West Virginia Department of Energy, Abandoned Mine Lands Section, were determined to make the Norton Mine Refuse Area Reclamation Project (Figure 1)

successful, in spite of the limited availability of soil and its poor quality. With help from the consultant on the project, Environmental Design Group, Inc., of Stow, O., they sought out new and innovative technology

from the BFGoodrich Co., in Brecksville, O.

The BFGoodrich Co. supplies a bactericide system, called ProMac Systems, which releases bactericides over prolonged periods of time to inhibit

Figure 2.
*Hydroseeder applying
ProMac bactericides*



the acid-producing bacteria indigenous to many mine soils. These products are bactericide-containing plastic pellets which come in various colors representing different time-release periods from two years to over seven years. During reclamation, bactericide spray and pellets are applied to the site after grading, but before it is covered with soil. A hydroseeder, as shown in Figure 2, or a combination of hydroseeder and lime spreader, is used to apply the bactericide materials. Figure 3 shows the gob surface after controlled release bactericide application.

On the 25 acre Norton site, BFGoodrich's second generation developmental products were used. The new products, now commercially available, were registered last December by the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), for use in controlling acid formation in mine soils.

Site Construction

The construction work on the Norton site was performed by the G.E. Ray Construction Co., Inc., of South Charleston, WV, and the ProMac Systems application was done by Dave Miller of Philippi, WV, under BFGoodrich supervision.

Construction began in August of 1984, resulting in parts of the site being treated with bactericides in October and November of 1984, and in late May of 1985. The ball diamond was constructed and treated in September, 1985. Aside from the ProMac treatment, the site was reclaimed using standard West Virginia DoE procedures with approximately six inches of soil cover.

A small area of approximately one acre was not treated with bactericides so that it could be used as a control for comparison.

Site Monitoring

Over 20 soil moisture samplers (pressure-vacuum lysimeters) were installed at different locations on the site to monitor the effects of the ProMac systems application in the vadose zone. The water samples were collected and analyzed by TraDet Laboratories, Inc., of Wheeling, WV. Monitoring of the site included periodic site inspections to measure surface vegetation and core sampling to determine refuse chemical characteristics and bacterial activity.

Results

Detailed results of monitoring were reported to West Virginia DoE in Reference 1. Highlights of these results are reported here.

Microbiology: The acid-producing bacterial population averaged almost 200 times greater in the control area than in the treated areas.

Water quality: All parameters in the treated areas were better than those in the control area. Of particular significance are over 75% decrease in sul-

phates and metals solubilization. This promotes the growth of heterotrophs necessary for establishing healthy revegetation. The Norton site has been stabilized with a luxuriant growth of vegetation, indicating the ProMac Systems treatment has already started the site back on its road to full recovery.



Figure 3.
*Refuse surface
after controlled release
bactericide application,
prior to soil cover.*

phates, 94% decrease in manganese, and 76% decrease in aluminum in the treated areas, compared to 38% decrease in sulphates and slight increase in aluminum in the control.

Refuse: Refuse pH in the treated area was 6, compared to 4.4 in the control.

Vegetation: The site shows excellent dense vegetation in its second year of growth.

Long-acting controlled release bactericide systems greatly reduce the population of the acid-producing bacteria causing a large decrease in

Acknowledgements

The ProMac Systems business group of The BFGoodrich Co. wishes to acknowledge the pioneering effort of the West Virginia Department of Energy, AML Section, and all others involved with this project.

References

- Sobek, A.A., and A.Horowitz. **The Norton Mine Refuse Area Reclamation Project Monitoring Report.** Submitted to the West Virginia Department of Energy, Division of Reclamation, AML Section. February 6, 1987.
- Rastogi, Vijay, and Andrew A. Sobek. **Reclaiming Abandoned Mine Lands Using Controlled Release Bactericides: A Case Study.** Eighth Annual AML Conference, Billings, Mont.. August 10-15, 1986.
- Bohac, Ronald J., Amikam Horowitz, Donald A. Benedetti, Andrew A. Sobek, and VijayRastogi. **Microbiological Studies of Sites Reclaimed With Bactericides.** Surface Mine Drainage Task Force Symposium. Morgantown, WV. April 7-8, 1987.



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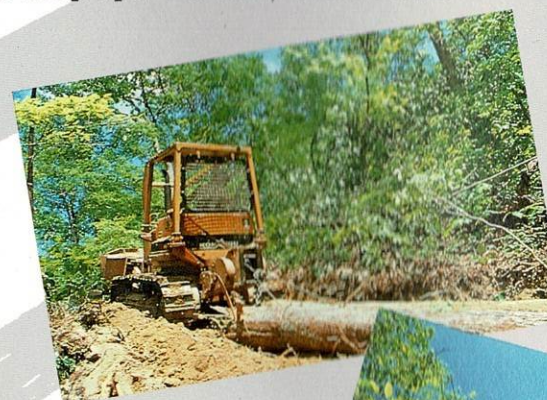
Garland and Clovis Manns

"No comparison to the competition." Garland Manns of Manns Lumber Company, Harts, West Virginia said it. "We've had a lot of other makes of equipment but Komatsu's D37E is by far the best for our needs."

Manns Lumber specializes in timbering and logging throughout the surrounding three-state region of West Virginia, Kentucky, and Ohio.

The D37E is used to build roads, skid trees, and push trucks.

"We even shove dirt uphill and do our logging on steep uphill terrain," Manns said.



Manns Lumber Company's D37E building roads and dragging timber in West Virginia.



Victor Mathieu

Victor Mathieu of Mathieu Timber, Louisa, Kentucky, likes the long track on his Komatsu D37E. "The extra track length gives us better balance on steep terrain.

This dozer hangs on hills a lot better than shorter track machines. I also like the power of the D37E."

Mathieu, who has been timbering for 23 years, said, "In all my years of working with dozers, this Komatsu is by far the best. And the Rish people are very helpful. I recommend them both."



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