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U.S. DEPARTMENT OF THE INTERIOR OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT DIRECTIVES SYSTEM	Subject Number: TSR-11 Transmittal Number: 616 Date: 6/8/90

Subject: Publication and Distribution of RecTec

Approval: [signature] Title: Director

1. **Purpose**. This directive sets forth the Office of Surface Mining Reclamation and Enforcement's (OSM) policies and procedures for publishing RecTec, a circular devoted to reclamation technology.

2. **Summary**. The directive describes OSM's policy, purpose and procedures for publishing RecTec (Appendix). Included are procedures for subscribing to the circular and for submitting material for publication.

3. **Definitions**. None.

4. **Policy/Procedures**.

a. **Background**. Several years ago, the U.S. Forest Service began publishing the RecTec newsletter. Its purpose was to disseminate scientific information of interest to the reclamation community. In Fiscal Year 1989, the Forest Service ended publication. Before publishing its final issue the Forest Service asked if OSM wanted to continue the service since RecTec readers were mostly OSM employees, employees of State regulatory and reclamation authorities, industry employees, and people from colleges and universities involved in surface mine reclamation research. OSM decided to continue the newsletter after State agencies requested that it not be ended.

b. **Policy**. RecTec is a means of promoting communication between regulatory employees, researchers and industry personnel involved in the reclamation of surface mined lands.

c. **Responsibilities**.

(1) The Assistant Director, Program Policy approves changes to format and editorial policies.

(2) Chief, Division of Technical Services approves each issue.

(3) Chief, Branch of Research and Technical Standards prepares and distributes RecTec, maintains the mailing list, and budgets funds for RecTec.

(4) Assistant Directors of Field Operations and Field Office Directors may submit notices of professional meetings and abstracts of professional papers for publication in RecTec.

d. **Procedures**.

(1) **Editorial Policies**. The circular will include notices of meetings and training courses, calls for papers, and abstracts of scientific and professional books and papers that are of interest to the reclamation community.

(2) **Submissions**. (a) OSM requests the submission of the above materials for RecTec from all sources. Please submit the materials at least 10 weeks before the scheduled date of the event. Materials should be mailed to the Branch of Research and Technical Standards at the address below. The Branch will not return material submitted for publication. (b) The Branch will use E-mail to send a draft copy of RecTec to the Director, Deputy Directors, and Assistant Directors for their review and comments. Any suggested modifications to the newsletter will be due back to the Branch within one week.

(3) **Publication**. RecTec will be published every 6 weeks in the attached format.

(4) **Subscriptions**. RecTec will be distributed to appropriate OSM managers by internal mail. Each manager and Field Office Director will be sent a copy for their use and further distribution to OSM staff. Requests from the public to receive RecTec can be submitted by mail, electronic mail, or telephone. Requests should include name, address including zip code, and affiliation.

Mail materials for submission and requests for subscriptions to:

Office of Surface Mining Reclamation and Enforcement
Division of Technical Services
Branch of Research and Technical Standards ATTN: RecTec
1951 Constitution Avenue N.W., MS-10
Washington, DC 20240.

The telephone numbers for the Branch are (202) 343-1514 or (FTS) 343-1514. The electronic mail (E-mail) box number is 171B.

5. **Reporting Requirements**. None

6. **Effect on Other Documents**. None

7. **References**. None.

8. **Effective Date**. Upon issuance.

9. **Contact**. Chief, Branch of Research and Technical Standards, (202) 343-1514 or FTS 343-1514.

10. **Keywords**. RecTec, Reclamation Technology, Technology Transfer, Meetings, Technical Publications.

11. **List of Appendices**. Appendix "Sample" of RecTec.

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RECLAMATION TECHNOLOGY

UNITED STATES
DEPARTMENT OF THE INTERIOR

OFFICE OF SURFACE MINING
RECLAMATION & ENFORCEMENT

BRANCH OF
RESEARCH & TECHNICAL STANDARDS

WASHINGTON, D.C.

NUMBER 2

MARCH 1990

SPECIAL EMPHASIS ON WETLANDS AND V.E.R.

This issue of "RecTec" focuses special attention on technical aspects of two issues that are better known for their political dimensions: preservation of wetlands, and the meaning of "valid existing rights" as applied to surface coal mining in certain specially protected areas.

Although political and administrative mechanisms may resolve those issues, technical information can make an important contribution to the process. The best decisions, ultimately, are the best-informed decisions. Thus "RecTec", in this issue, is featuring abstracts of technical publications and articles that are related to wetland preservation and the meaning of valid existing rights.

CALL FOR PAPERS

The editor of "RecTec" is making an appeal to its readers to send in notices of Call for Papers. Topics should cover meetings and conferences dealing with mine land reclamation.

RECLAMATION MEETINGS

An International Symposium: Fire and the Environment, Knoxville, TN, 3/20-24/90 - for more information contact the Program Chair, Fire and Environment Symposium, P.O. Box 1071, The University of Tennessee, Knoxville, TN 37901-1071, (615) 974-7984.

1990 Billings Symposium-Fifth Edition, Billings, MT, 3/25-30/90 - Western United States reclamation workshop. For more information contact Frank Munshower, Reclamation Research Unit, Montana State University, Bozeman, MT 59717, (406) 994-4821; and Scott E. Fisher, Jr., OSM, 1020 15th St., Denver, CO 80202, (303) 844-4837 or home (303) 238-5691.

Symposium on Valid Existing Rights (VER), Washington, DC, 4/3-4/90 - papers dealing with individual views on the VER concept from a variety of perspectives, including a thorough academic analysis of the constitutional implications of the VER provisions of section 522(e) of the Surface Mining Act. For more information contact Patrick Boyd, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Ave., N.W., Washington, DC 20240, (202) 343-4561.

Geotechnology and the Environment: Issues of the 90's, Baltimore, MD, 4/19-20/90 - technical sessions on the following topics: underground storage tanks, tidal and non-tidal wetlands, environmental site assessments, and regional environmental concerns. Further information can obtained by writing to: Schnabel Engineering Associates, 1600 North Calvert Street, Baltimore, MD 21202, Attn: David Kozera.

The 1990 Mining and Reclamation Conference-7th Annual Meeting of the American Society for Surface Mining and Reclamation, Charleston, WV, 4/23-26/90 - contact: Jeff Skousen or John Sencindiver, West Virginia University, Morgantown, WV 26506-6108, (304) 293-6256.

The Society for Ecological Restoration Second Annual Conference, Chicago, IL, 4/29-5/3/90 - papers dealing with all aspects of ecological restoration. For further information contact Keith Winterhalder, Program Chair, Biology Department, Laurentian University, Sudbury, Ontario, Canada P3E 2C6, (705) 675-1151, ext. 2213.

Coal Convention '90/Coal Prep 90 International Exhibition and Conference, Cincinnati, OH, 5/6-10/90 - papers dealing with coal cleaning, handling and storage, moisture reduction and classification, operations and maintenance, process control, quality control, and reclamation technology. For further information contact American Mining Congress, 1920 N Street N.W., Suite 300, Washington, DC 20036, (202) 861-2834.

The 17th Annual Conference on Wetlands Restoration and Creation, Tampa, FL, 5/10-11/90 - topics concentrating on fresh water, estuarine and marine wetlands systems; marsh, mangrove and seagrass restoration; mine reclamation; mitigation, permitting and regulatory policies; management techniques. For information contact Fred Webb, Director of Economic Development, Hillsborough Community College, 1206 N. Park Road, Plant City, FL 33566.

1990 National Symposium on Mining: A New Beginning, Knoxville, TN, 5/14-18/90 - contact Patricia Hammond, Symposium Coordinator, Office of Continuing Education/Engineering, 305 Slone Building, University of Kentucky, Lexington, KY 40506-0053, (606) 257-4295.

The 1989-1990 Satellite Program-Backfilling and Grading, Office of Surface Mining, Washington, DC, 5/24/90 - for more information contact Services Branch, MSHA, P.O. Box 1166, Beckley, WV 25802-1166, (304) 256-3267.

Society of Wetland Scientists 11th Annual Meeting, Breckenridge, CO, 6/4-8/90 - for more information contact Gerry Horak, TGS Technology, P.O. Box 9076, Fort Collins, CO 80525, (303) 226-9413.

The National Association of State Land Reclamationists Annual Conference, Gatlinburg, TN, 9/23-27/90 - addresses current reclamation issues and developments from around the country. The conference will also include a field trip to local mines and this conference will be held in conjunction with the Annual Interstate Mining Compact Commission Meeting. For more information contact Greg Conrad, NASLR, 459B Carlisle Dr., Herdon, VA 22070, (703) 709-8654.

OSM TECHNICAL TRAINING COURSES

SURFACE AND GROUND WATER HYDROLOGY–Somerset, PA, 5/8-11/90, closing date 3/27/90. **Contact** Hazel Dawson, (202) 343-5587.

UNDERGROUND MINING TECHNOLOGY AND EFFECTS–Indiana, PA, 5/15-18/90, closing date 4/3/90. **Contact** Peaches Butler, (202) 343-3061.

SOILS AND REVEGETATION–Steamboat Springs, CO, 5/15-19/90, closing date 4/3/90. **Contact** Hazel Dawson, (202) 343-5587.

SPOIL HANDLING AND DISPOSAL--Kentucky, 5/22-25/90, closing date 4/10/90. **Contact** Hazel Dawson, (202) 343-5587.

ENFORCEMENT PROCEDURES--Somerset, PA, 6/5-8/90, closing date 4/24/90. **Contact** Branch of Technical Training, (202) 343-1825.

SURFACE AND GROUND WATER HYDROLOGY--Carbondale, IL, 6/5-8/90, closing date 5/1/90. **Contact** Branch of Technical Training, (202) 343-1825.

UNDERGROUND MINING TECHNOLOGY EFFECTS–Pikesville, Ky, 6/19-22/90, closing date 5/8/90. **Contact** Branch of Technical Training (202) 343-1825.

NEW SURFACE MINE RECLAMATION RELATED PUBLICATIONS

VEGETATION RESPONSE TO SOIL SURFACE MODIFICATION IN MINED LAND RECLAMATION by G. E. Schuman, F. Rauzi, and G. S. Howard. Reclamation and Revegetation Research, 6:49-54:1987.

Land surface modifications on rangeland for improved water conservation and increased forage production have been practiced for nearly 50 years in semi-arid and arid regions in the US. In recent years, this technology has been adapted to mined lands in these regions to aid the establishment of vegetation. The objective of this study was to

evaluate the effect of three surface modification treatments (pitting, furrowing, and soil ridges) on forage production at a mined land area where about one-third of the annual precipitation occurs in snow fall. An increased above-ground biomass of crested wheatgrass over the 6-year period was observed. For a copy of the study contact Gerald E. Schuman, Soil Scientist, USDA-ARS, High Plains Grasslands Research Station, 8408 Hildredth Rd., Cheyenne, WY 82003, (307) 772-2433.

THE LATEST WORD ON WETLANDS by J. Skousen and J. Sencindiver. In: Green Lands 18(2):25-27:1988.

This paper gives an overview on the use of constructed wetlands for the purpose of treating acid mine drainage. The overview is drawn from papers presented at a reclamation conference sponsored by the ASSMR and USDI Bureau of Mines and OSM. For copies contact J. Skousen, 1106 Agricultural Sciences, West Virginia University, Morgantown, WV 26506-6108, (304) 293-6256.

THE REVEGETATION OF COAL STRIP MINES ON SEMIARID COLORADO RANGELANDS by W. J. McGinnies. In: Rangelands: A Resource Under Siege: Proceedings of the 2nd International Congress; 1984 5/13-18; Adelaide, Australia; 1986:170.

Rangelands strip mined for coal can be reclaimed if topsoil is saved and suggested revegetation procedures are followed. This paper discusses procedures that produce successful revegetation in Colorado. For a copy contact W. J. McGinnies, USDA, Agricultural Research Service, Colorado State University, Ft. Collins, CO 80525.

TILLAGE EFFECTS ON BULK DENSITY DURING RECLAMATION OF MINED SOIL by S. A. Schroeder, ND Farm Research 46(1):13-16:1988.

The main objectives of this study were (1) to determine if various tillage treatments or operations after or during subsoil respreading would result in lower bulk density after topsoil; (2) to determine if tillage operations after topsoil respreading would result in lower bulk densities; and (3) to study the effects of the treatments by depth over time on such factors as bulk density, root penetration, and soil water movement. Contact S. A. Schroeder, NDSU/LRRC, Box 459, Mandan, ND 58554, (701) 663-6445/ext. 161.

VALID EXISTING RIGHTS AND THE CONSTITUTION: 1983 REGULATORY CHANGES by McFerrin and Whitman. W. VA. L. Rev., West Virginia University, 87:647-664:1985.

Examines the takings definition of VER and discusses problems that may result from attempting to apply that definition, including lack of uniformity among States, giving responsibility for constitutional determinations to administrators who are not equipped to make them, and the possibility of expanding the areas where surface mining would be allowed. Contact J. McFerrin, Appalachian Research Fund, Charleston, WV 25301.

LAND RECLAMATION - CHALLENGE AND OPPORTUNITIES by J. Skousen. In: Proceedings, Eighth Annual Surface Mine Drainage Task Force Symposium, Morgantown, WV; 1987:3p.

This paper discusses the author's efforts of the past year to keep organizations and individuals informed of the research, different techniques, practices, and procedures used by various groups in the areas of reclamation and acid mine drainage. For further information contact J. Skousen, College of Agricultural and Forestry, WV University, Morgantown, WV 26506-6108, (304) 293-6256.

ABANDONED MINE LAND RECLAMATION IN WEST VIRGINIA by N. A. Robinson. In: Proceedings, 1987 National Symposium on Mining, Hydrology, Sedimentology, and Reclamation, December 7-11, 1987, Springfield, IL. 1987:271-275.

In this paper, various reclamation techniques that have been and are currently being used by the West Virginia Department of Energy, Abandoned Mine Land Program are discussed. Techniques described include deep mine sealing, refuse pile stabilization, subsidence control, mine fire extinguishment and landslide stabilization. For copies contact N. A. Robinson, West Virginia Department of Energy-AML, 1615 Washington St-East, Charleston, WV 25311, (304) 348-3500.

METALLIC ION RELATIONSHIPS OF AQUATIC MACROPHYTES ESTABLISHED ON SLURRY WETLAND SUBSTRATES by B. W. Wilm and J. R. Nawrot. In: Proceedings, 1987 National Symposium on Mining, Hydrology, Sedimentology, and Reclamation, December 7-11, 1987, Springfield, IL. 1987:65-70.

Since 1975, the Cooperative Wildlife Research Laboratory of Southern Illinois University at Carbondale has been actively involved in the planning and/or establishment of more than 8000 acres of wetland habitat directly on amended and unamended slurry impoundments. Although wetland habitat establishment has been recognized as a viable and cost-effective reclamation technique, regulatory and public acceptance has been influenced by concerns that the vegetation grown might contain concentrations of metallic ions toxic to wildlife. This study was designed to

screen for potential wildlife toxicity by examination of metal content on dominant vegetation grown in various age slurry wetlands. For a copy contact J. R. Nawrot, Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, IL 62901, (618) 453-2801.

FIRST YEAR EVALUATION OF MITIGATED WETLANDS ON TWO MINE SITES IN WESTERN PENNSYLVANIA by F. J. Brenner and B. A. Sterner. In: Proceedings, Mine Drainage and Surface Mine Reclamation, April 19-21, 1988, Pittsburgh, PA. 1988:133-138. Vol. II: Mine Reclamation, Abandoned Mine Lands and Policy Issues.

This paper discusses the construction, establishment of wetland vegetation, and their use by wildlife in the light of overall ecology of reclaimed mine lands. Contact F. J. Brenner, Biology Department, Grove City College, Grove City, PA 16127, (412) 458-2113.

REGULATION AND LAND WITHDRAWALS: DEFINING 'VALID EXISTING RIGHTS' by M. Jarrison. J. Min. L. & Pol'y 3:517-549:1988.

Examines the development of the term "VER" under the homestead acts, mining claims law, leasing laws, and withdrawal statutes. Examines legislative history of SMCRA. Concludes that VER under SMCRA should be handled the same as under other laws, involving a determination as to whether a right exists, and if VER is found, a determination as to whether the application of appropriate regulatory controls effects a taking. Contact M. Jamison, University of Kentucky, Mineral Law Center, Lexington, KY 40546.

THE ROLE OF WETLANDS IN WATER MANAGEMENT, MINE DRAINAGE ON SURFACE MINED LANDS by F. J. Brenner. Australian Mining Industry Council Environment Workshop 1988 Proceedings. 1:14-27:1988.

This paper presents a discussion of wetlands on reclaimed surface mines in general concepts and types. A case study of two wetlands on reclaimed land in northwestern Pennsylvania is presented. For a copy contact F. J. Brenner, Biology Department, Grove City College, Grove City, PA 16127, (412) 458-2113.

PENNSYLVANIA COAL COMPANY V. MAHON REVISTED: IS THE FEDERAL SURFACE MINING ACT A VALID EXERCISE OF THE POLICE POWER OR AN UNCONSTITUTIONAL TAKING? by McGinley and Barrett. Tulsa L. J., University of Tulsa, 16:418-452:1981.

Examines Pennsylvania Coal and its applicability to § 522 of SMCRA. Concludes that diminution of value is one factor to be considered in determining whether there has been an exercise of the power of eminent domain, but is not a factor in determining the validity of police power action to protect public interests from harmful private activities. Contact Patrick C. McGinley, West Virginia University, Morgantown, WV 26506.

HYDROGEOCHEMICAL, VEGETATIONAL AND MICROBIOLOGICAL EFFECTS OF A NATURAL AND CONSTRUCTED WETLAND ON THE CONTROL OF ACID MINE DRAINAGE by D. J. Dollhopf, J. D. Goering, R. B. Rennick, and R. B. Morton. Publ. No. 8804:1-214:1988.

A natural wetland in Montana, subjected to at least 40 years of acid mine drainage (AMD), was evaluated and compared to control wetland and a constructed wetland. The natural wetland was effective in removing iron from AMD, but was less effective in removing manganese and other metals. Hydraulic conductivity of the natural wetland averaged 74 ft/day which was much slower than the constructed wetland. Plant tissues in the natural wetland contained metal levels that exceeded the maximum dietary intake level for domestic animals. Sulfate-reducing bacteria were functioning in the natural wetland, but not in the constructed wetland. Constructed wetland poor performance may have been due to reduced microbial activity rather than its small size. For copies send $20 to Reclamation Research Unit, Montana State University, 106 Linfield Hall, Bozemen, MT 59717, (406) 994-4821.

We appreciate your continued support of "RecTec" by sending us notices of call for papers and meetings, and technical articles and papers that are appropriate for "RecTec" at the address shown below. Please submit the material to Robert Wiles, Office of Surface Mining Reclamation and Enforcement, 1951 Constitution Ave. NW, (5101 L), Washington, D.C. 20240, (202) 343-1502.

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RECLAMATION TECHNOLOGY

UNITED STATES
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OFFICE OF SURFACE MINING
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BRANCH OF
RESEARCH & TECHNICAL STANDARDS

WASHINGTON, D.C.

NUMBER 1

JANUARY 1990

Welcome from OSM

Technology is an ally in taking care of the land. Advances in reclamation technology have greatly expanded America's capabilities in fulfilling the national stewardship responsibility for restoring mined land for further productive uses. Thus, the work of transferring reclamation technology to the widest possible audiences of potential users of that technology is an important function of our national reclamation agencies.

In taking over responsibility for the publication of "Rec Tec", the Interior Department's Office of Surface Mining (OSM) is extending a valuable tradition of technology transfer established by the U.S. Forest Service, Department of Agriculture. Since "Rec Tec" first appeared, OSM staff members all across the country have been steady readers. That of course will continue. Meanwhile, we hope other members of the "Rec Tec" audience will keep on reading "Rec Tec", and keep on using the information it contains.

We also hope the "Rec Tec" audience will grow, in both the private and the public sectors, at colleges and universities, among earth-science and life-science practitioners, and in the ranks of State, Federal, and local officials.

Technology transfer works best as an interactive enterprise, a two-way street. For that reason, "Rec Tec" will remain open to contributions and suggestions from all its readers. We are glad to have you as part of the reclamation technology transfer process.

HARRY M. SNYDER
Director
Office of Surface Mining

CALL FOR PAPERS

Coal Prep Conference, Cincinnati, OH, 5/7-10/90 - abstracts covering topics: coal cleaning, handling and storage, moisture reduction and classification, operations and maintenance, process control, and quality control. Submit abstracts of less than 400 words to Mark Sprouls, COAL Magazine, 29 North Wacker Drive, Chicago, IL 60606.

The Society for Ecological Restoration Second Annual Conference, Chicago, IL, 4/29-5/3/90 - papers dealing with all aspects of ecological restoration. Special consideration will be given papers directly related to prairie restoration, restoration and global climate change, setting standards for monitoring restoration projects, restoration and recovery of endangered species, restoration philosophy, but papers dealing with any aspect of ecological restoration are welcome. Abstracts are due Jan. 15, 1990. For further information contact Keith Winterhalder, Program Chair, Biology Department, Laurentian University, Sudbury, Ontario, Canada P3E 2C6, (705) 675-1151, ext. 2213.

Symposium on Valid Existing Rights (VER), 5/90 - papers dealing with individual views on the VER concept from a variety of prespectives, including a thorough academic analysis of the Constitution implications of the VER provisions of section 522 (e) of the Surface Mining Act. Submit a summary of less than 400 words on your views and suggestions before Jan. 31, 1990, to Mr. Patrick Boyd, Office of Surface Mining Reclamation and Enforcement, Rm. 108, 1951 Constitution Ave., N.W., Washington, D.C. 20240, (202) 343-4561.

RECLAMATION MEETINGS

International Erosion Control Association, 21st Annual Conference, Washington, DC, 2/21-23/90. For more information contact Ben Northcutt, Executive Director, International Erosion Control Association, P.O. Box 4904, 1485 S. Lincoln, Steamboat Springs, CO 80477, (303) 879-3010.

Fifth Federal Interagency Sedimentation Conference, Las Vegas, NV, 3/18-21/90 - papers dealing with practical sediment management issues and answers. Topics relating to risk assessment, trend assessment, instrumentation,

may significantly underestimate total erosion of barren ground because of the effects of gully erosion and mass wasting to net erosion. For a copy contact Lon Drake, Dept. of Geology, University of Iowa, Iowa City, IA 52242, (319) 335-1826.

REHABILITATION OF PITS AND QUARRIES FOR FOREST PRODUCTION by T. W. Hilditch, G. A. Sinclair and C. P. Hughes. Ontario Ministry of Natural Resources, 1988.

It is one of the manuals making up a series of handbooks published by the Ontario Ministry of Natural Resources to assist pit and quarry operators in formulating and carrying out effective rehabilitation programs. The manual assesses forest production in exhausted pits and quarries where rehabilitation work is performed. In addition to guiding owners through the forest production cycle. The handbook also lists references containing more detailed rehabilitation information. Contact B. Messerschmidt, Land Management Branch, Toronto, Ontario (416) 965-3127.

AGRICULTURAL IMPACTS OF COAL MINE SUBSIDENCE: EVALUATION OF THREE ASSAY METHODS by R. G. Darmody, J. S. Steiner, I. J. Jansen, and S. G. Carmer. In: J. Environ. Qual., Vol. 17, No. 3, 510-513, July-Sept. 1988.

A method of assessing damage to agricultural production caused by underground coal mine subsidence using a microcomputer and spread sheet program to store and analyze data from maps and aerial photographs was developed and evaluated. Damage to agricultural lands occurs mainly in the form of wet, closed depressions. The paper discusses three dot-grid sampling methods studied and recommends a 64-point regular grid sampling method for obtaining a representative sample of a large area. For a copy contact Dr. Ivan J. Jansen, Dept. of Agronomy, Univ. of Illinois, 1102 S. Goodwin Ave, Urbana, IL 61801.

CHEMICALS FOR TREATING ACID MINE DRAINAGE by Jeff Skousen. In: Green Lands (18) 36-40; Fall 1988.

This paper discusses chemicals which are used to treat AMD, water quality parameters which are involved in selecting the proper chemical for a particular AMD problem, and practical considerations. Contact Jeff Skouser, West Virginia University, 1106 Agric. Sci., Morgantown, WV 26506-6108. Telephone (304) 293-6256.

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