WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION
Form #6

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OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE

AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE

AGENCY: West Virginia Division of Environmental Protection-Office of Water Resources TITLE NUMBER: 47

AMENDMENT TO AN EXISTING RULE: YES _____ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: 60

TITLE OF RULE BEING PROPOSED: Monitoring Well Design Standards

THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) HB 4224

SECTION 64-3-1(k), PASSED ON April 2, 1996

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE FOLLOWING DATE: May 1, 1996

Laidley Eli McCoy, Director
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March 12, 1996

Dave Watkins
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HB 4224 authorizing, **Title 47**, **Series 60**, **Monitoring Well Design Standards** passed the Legislature on **March 9, 1996**. It is now awaiting the Governor's signature.

You have sixty (60) days after the Governor signs **HB 4224** to final file the legislative rule with the Secretary of State's office. To final file your legislative rule, fill in the blanks on the enclosed form #6, the "Final Filing" form and file the form with our office with a promulgation history of the rule. Authorization for your legislative rule is cited in **HB 4224 Section 64-3-1(k)**. The agency may set the effective date of the legislative rule up to ninety (90) days from the date the legislative rule is final filed with the Secretary of State's office. Please have an authorized signature on the bottom line.

***IMPORTANT: IF YOUR AGENCY HAS COMPLETED THE LEGISLATIVE RULE ON A WORD PERFECT OR WORD PERFECT COMPATIBLE COMPUTER SYSTEM THAT USES A 3 1/2" DISK, **YOU MUST SUBMIT A CLEAN COPY WITH ALL UNDERLINING AND STRIKE-THROUGHS, HEADERS OR FOOTERS REMOVED,** TO OUR OFFICE WHEN FINAL FILING THE RULE. REMEMBER, THE TEXT OF THE COMPUTER FILED RULE **MUST BE** IDENTICAL - WORD FOR WORD, COMMA FOR COMMA, **WITH ALL UNDERLINING, STRIKE-THROUGHS, HEADERS OR FOOTERS REMOVED,** AS THE HARD COPY AUTHORIZED BY THE LEGISLATURE. **NOTICE: ALL ELECTRONIC FILINGS NOT COMPLYING WITH THIS WILL BE REJECTED AND SENT BACK TO THE AGENCY TO BE RESUBMITTED!**

After the final rule is entered into the data base, the rule will be sent back to the agency for review and proofing. The agency has ten (10) working days to send a confirmation or corrections to the Secretary of States. If the agency fails to return this within ten (10) working days, the rule will be filed in the data base with a disclaimer attached stating that the agency failed to review the rule. Following confirmation, corrections or failure to review, as the case may be, the Secretary of State shall submit to the agency a final version of the rule for their records.

If you have any questions or need any assistance, please do not hesitate to contact our office.

Thank you,
Administrative Law Division

PROMULGATION HISTORY
for
Monitoring Well Design Standards
47 CSR 60

May 31, 1995	filed Notice of Public Hearing on Proposed Rule
July 7, 1995	filed Notice of Agency Approval of a Proposed Rule and Filing with the Legislative Rule Making Review Committee
August 1, 1995	Agency letter to LRMRC forwarding remainder of filing information
January 17, 1996	filed Notice of Rule Modification of a Proposed Rule
March 9, 1996	HB 4224 passed
April 2, 1996	Governor signed HB4224
May 1, 1996	Rule filed
May 1, 1996	Rule Effective

TITLE 47
LEGISLATIVE RULES
BUREAU OF THE ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF WATER RESOURCES

SERIES 60
MONITORING WELL DESIGN STANDARDS

§47-60-1. General.

1.1. Scope and Purpose. - This rule establishes minimum acceptable documentation and standards for the design, installation, construction, and abandonment of monitoring wells and for the abandonment of all boreholes.

1.2. Authority - West Virginia Code §22-12-5(d).

1.3. Filing Date - May 1, 1996.

1.4. Effective Date - May 1, 1996.

§47-60-2. Applicability.

This rule applies to any person who either owns, operates, constructs, installs, or abandons monitoring wells and boreholes. All monitoring wells and boreholes shall be abandoned according to section 19 of this rule. This rule does not apply to monitoring wells and boreholes installed prior to the effective date of this rule, except as provided for in section 19 of this rule.

§47-60-3. Definitions.

3.1. "Abandonment" means the sealing of a monitoring well or borehole in accordance with section 19 of this rule in order to restore original hydrogeologic conditions and/or to prevent contamination.

3.2. "Air rotary drilling" means a drilling method whereby the borehole is advanced using a circular rotating action applied to a string of drilling rods which have a diffused discharge bit attached to the bottom of the rods. Pressurized air is forced through the drilling rods and cools the drilling tools and removes the cuttings from the borehole.

3.3. "Annular space" (Annulus) means the space between two well casings or between the casing and the borehole sidewall.

3.4. "Annular space seal" means the following:

3.4.1. For wells constructed with filter packs, it is the material placed above the top of the filter pack or the filter pack seal up to the surface seal and between the well casing and the adjacent formation; or

3.4.2. For wells constructed into bedrock formations and without well screens, it is the material placed from the bottom of the enlarged borehole up to the surface seal, between the well casing and the adjacent formation.

3.5. "Appropriate groundwater regulatory agency" means the groundwater regulatory agency which has primary regulatory oversight of a particular facility or activity. Where primary regulatory oversight is unassigned or shared, the Director shall determine which groundwater regulatory agency is to be the appropriate groundwater regulatory agency.

3.6. "Aquifer test well" means a monitoring well installed to provide information on the hydraulic conductivity, transmissivity, storage coefficient, capture zone, specific capacity, radius of influence or other physical parameters of an aquifer, defined geologic unit, or water bearing formation.

3.7. "ASTM" means American Society for Testing and Materials.

3.8. "Bedrock" means the continuous solid rock underlying any loose surficial material such as soil, alluvium or boulders. Bedrock includes, but is not limited to, limestone, dolomite, sandstone, shale, coal, igneous and metamorphic rock.

3.9. "Bentonite" means a clay consisting of at least 85% montmorillonite. Bentonite is available in the following forms:

3.9.1. "Bentonite powder" means 200 mesh pure bentonite, without additives.

3.9.2. "Bentonite granules" means 8 mesh pure bentonite, without additives.

3.9.3. "Bentonite pellets" means commercially manufactured tablets made by compressing pure bentonite, without additives, into forms greater than 1/4" in size.

3.9.4. "Bentonite chips" means commercially processed angular fragments of pure bentonite, without additives.

3.10. "Bentonite - cement grout" means a mixture with the ratio not to exceed 5 pounds of bentonite with 94 pounds of Portland cement and approximately 8.6 gallons of water from an uncontaminated source.

3.11. "Bentonite - fine sand slurry" means a mixture with the minimum ratio of 50

pounds of bentonite with 100 gallons of water from an uncontaminated source and 10-25% sand by volume for a mud weight of 11 pounds per gallon.

3.12. "Bentonite granular slurry" means a thoroughly blended mixture of up to 30 pounds of untreated bentonite powder added to 100 gallons of water from an uncontaminated source with a minimum of 100 pounds of untreated bentonite granules mixed together by a Venturi hopper mud mixer or other equivalent high shear mixer.

3.13. "Bentonite high-solids grout" means a thoroughly blended mixture of water from an uncontaminated source with untreated bentonite, without additives. The mixture by weight shall contain a minimum of twenty percent (20%) bentonite solids.

3.14. "Borehole" means a circular hole deeper than it is wide, constructed in earth material for the purpose of obtaining geologic or groundwater related data. Boreholes are also referred to as drillholes.

3.15. "Certified Monitoring Well Driller" means an individual granted a written certificate by the director to drill, construct, alter, or abandon monitoring wells and who meets the requirements of 47 CSR 59, Monitoring Well Regulations.

3.16. "Clay" means a fine grained inorganic soil with a grain size less than 75 um and having a plasticity index equal to or greater than 4.

3.17. "Clustered Monitoring Wells" means individual monitoring wells situated close together, but not in the same borehole. Clustered wells are most often used for monitoring ground water conditions at various depths in roughly the same area.

3.18. "Coarse sand" means a well sorted sand with a predominant grain size between 4.76 mm and 2.0 mm as established by the unified soil classification system.

3.19. "Concrete" means a slurry mixture with a ratio of 94 pounds of cement, equal volumes of dry sand and gravel and 5 to 6 gallons of water from an uncontaminated source. The ratio of sand and gravel to cement may not exceed 3 parts to one.

3.20. "Contaminant" means any material in a solid, liquid or gaseous state that has the potential to cause contamination.

3.21. "Contamination" means any man made or man induced alteration of the chemical, physical, or biological, integrity of the groundwater, resulting from activities regulated under the West Virginia Groundwater Protection Act, in excess of existing groundwater quality, unless that site has been granted a deviation or variance from existing quality as provided for in the West Virginia Groundwater Protection Act, or is subject to an order, permit, or other regulatory action that requires restoration or maintenance of groundwater quality at a different concentration or level.

3.22. "Director" means the director of the Division of Environmental Protection of the Bureau of Environment or his/her authorized designee.

3.23. "Driven point well" means a well constructed by joining a drive point with lengths of pipe and driving the assembly into the ground with percussion equipment or by hand, without first removing material below the 10 foot depth.

3.24. "Excavated Well" means any monitoring well which is constructed by backfilling appropriately sized unconsolidated material around the well screen. Excavated wells will be installed in accordance with sections 6, 7, and 8, paragraph 11.4.3, and subsection 11.5 of this rule. Excavated wells include, but are not limited to any tank pit observation well.

3.25. "Filter pack" means the sand, gravel or both placed in direct contact with the well screen.

3.26. "Filter pack seal" means the sealing material placed in the annular space above the filter pack and below the annular space seal to prevent the migration of annular space sealant into the filter pack.

3.27. "Fine sand" means a well sorted sand with a predominant grain size between 0.42 mm and 0.074 mm, as established by the unified soil classification system.

3.28. "Gravel" means an unconsolidated material with the predominant grain size being between 76.2 mm and 4.76 mm, as established by the unified soil classification system.

3.29. "Groundwater" means the water occurring in the zone of saturation beneath the seasonal high water table, or any perched water zones.

3.30. "Groundwater Observation Well" means any monitoring well in which the screened interval intersects the water table.

3.31. "Groundwater Regulatory Agency" means the Division of Environmental Protection, the Bureau for Public Health, the Department of Agriculture, or any other political subdivision which has received approval from the director to regulate facilities or activities for groundwater protection.

3.32. "Hollow stem auger drilling" means a drilling method where continuous flighting is welded to a hollow stem pipe. The flighting carries drill cuttings to the surface as the flighting is rotated and pushed down into the earth.

3.33. "Inside diameter" means the horizontal distance between the inner walls of a well casing, hollow stem auger or tremie pipe.

3.34. "Medium sand" means a well sorted sand with a predominant grain size between

2.0 mm and 0.42 mm, as established by the unified soil classification system.

3.35. "Monitoring well" means any cased excavation or opening into the ground made by digging, boring, drilling, driving, jetting, or other methods for the purpose of determining the physical, chemical, biological, or radiological properties of groundwater. The term "monitoring well" includes piezometers, and observation wells, which are installed for purposes other than those listed above, but does not include wells whose primary purpose is to provide a supply of potable water.

3.36. "Montmorillonite" means a group of expanding lattice clay minerals of the general formula:

$$R_{0.33}Al_2Si_4O_{10}(OH)_2 \cdot H_2O,$$

where R means one or more cations of sodium, potassium, magnesium or calcium and where Al means aluminum, Si means silicon, O means oxygen and H means hydrogen.

3.37. "Mud rotary drilling" means a drilling method whereby a borehole is advanced by using a circular rotating action applied to a string of drilling rods which have a diffused discharge bit attached to the bottom of the string. A bentonite and water mud slurry is used to provide borehole stability, to cool the bit and to carry cuttings to the ground surface.

3.38. "Neat cement grout" means a slurry mixture with a ratio of 94 pounds of Portland cement mixed with 5 to 6 gallons of water from an uncontaminated source.

3.39. "Nested monitoring wells" means two or more casing strings within the same borehole. The screened interval of each casing string is designed to monitor water from different zones.

3.40. "Percussion drilling" means a drilling method using a cable tool drilling machine or a drilling method whereby the permanent or temporary well casing is driven, or is set into a borehole and then driven.

3.41. "Permanent monitoring well" means any monitoring well in place for 60 days or longer.

3.42. "Person" means any industrial user, public or private corporation, institution, association, firm or company organized or existing under the laws of this or any other state or country; state of West Virginia; governmental agency, including federal facilities; political subdivision; county commission; municipal corporation; industry; sanitary district; public service district; soil conservation district; watershed improvement district; partnership; trust; estate; person or individual; group of persons or individuals acting individually or as a group; or any legal entity whatever.

3.43. "Piezometer" means a monitoring well sealed below the water table and which is

installed for the specific purpose of determining the potentiometric surface or the physical, chemical, biological, or radiological properties of groundwater, or both.

3.44. "Potentiometric surface" or "piezometric surface" means an imaginary surface representing the total head of groundwater and is the level to which water will rise in a well.

3.45. "Psi" means pounds per square inch.

3.46. "Purge" means an action that removes water from the well, commonly accomplished by using a pump or bailer.

3.47. "Recovery well" means a well intended and designed to capture and remove contaminants from the subsurface.

3.48. "Rotary wash drilling" means a drilling method whereby metal temporary casing is advanced into the borehole by driving. At selected intervals, the temporary casing is cleaned out using rotary drilling tools by pumping clean water through the rod to flush out accumulated cuttings. This drilling method is also known as wash bore or wash down drilling.

3.49. "Sand-cement grout" means a mixture of cement, sand and water in the proportion of 94 pounds of Portland cement, one cubic foot of dry sand and 5 to 6 gallons of water from an uncontaminated source.

3.50. "Sediment" means any unconsolidated material including, but not limited to clay, silt, sand, gravel, and rock particles.

3.51. "Solid stem auger drilling" means a drilling method where continuous flighting is welded onto a solid stem pipe. The flighting carries drill cuttings to the surface as the flighting is rotated and pushed down into the earth. The borehole is created by a cutting bit located at the tip of the lead auger.

3.52. "Specific gravity" means the weight of a particular volume of substance compared to the weight of an equal volume of water at a reference temperature.

3.53. "Surge" means an action causing water to move rapidly in and out of the well screen, thereby removing fine material from the surrounding aquifer.

3.54. "Tank Pit Observation Well" means any vapor observation well or groundwater observation well or both installed in an underground storage tank excavation for release detection purposes.

3.55. "Temporary monitoring well" means any monitoring well in place for less than 60 days.

3.56. "Top of bedrock" or "top of firm rock" means at least 70% of the drill cuttings being either:

3.56.1. Angular rock fragments, as in the case of crystalline rock; or

3.56.2. Rock fragments composed of individual grains or rock particles that are cemented together to form an aggregate as opposed to a single sediment particle.

3.57. "Tremie pipe" means a pipe or hose used to install well construction materials in an annular space or a borehole.

3.58. "Unconsolidated material" means that material found above bedrock, composed of single sediment particles, individual grains or rock fragments. Unconsolidated material includes but is not limited to clay, silt, sand, gravel, loess, peat and organic soil.

3.59. "Unified soil classification system" means the soil designation system based on the physical properties of the soil developed from the airfield classification system in 1952 and adopted by the American Society for Testing and Materials in standard test method D2487-83.

Note: A copy of this publication is available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

3.60. "Vapor Observation Well" means any excavated well in which the screened interval intersects the backfill or unconsolidated material which is sufficiently porous to readily allow diffusion of vapors into the well.

3.61. "Water table" means the surface of unconfined groundwater where the water pressure is equal to atmospheric pressure.

3.62. "Water table observation well" means any monitoring well, in which the screen or open borehole intersects a water table, which is installed for the specific purpose of determining either the elevation of the water table or the physical, chemical, biological, or radiological properties of groundwater, or both.

3.63. "Well" means any borehole or other excavation or opening in the ground deeper than it is wide constructed for the purpose of obtaining or monitoring the surrounding media, including groundwater. This definition does not include water wells whose sole purpose is to: provide a supply of water, for exploration of water, for dewatering, or to function as heat pump wells.

3.64. "Well depth" means the distance from the ground surface to the bottom of the well screen or to the bottom of the open hole when a well screen is not used.

3.65. "Well riser" means the impervious portion of pipe extending from the top of the

well screen or open borehole to the top of the monitoring well. The well riser prevents undesirable fluids and materials from entering the monitoring well and provides access to the zone or the interval being monitored.

3.66. "Well screen" means the filtering device that allows groundwater to flow freely into a monitoring well from an adjacent formation.

3.67. "Well volume" means the volume of water contained in the well casing and the filter pack.

§47-60-4. Conflicting Provisions.

Where in certain instances existing rules impose requirements that are more or less restrictive than the requirements of this rule, and in the event that this rule conflicts with another applicable rule, the director shall determine which rule, or section(s) thereof, best complies with the intent of the Groundwater Protection Act, West Virginia Code §22-12-1 et seq. and require adherence to said rule or section(s) thereof. The director may, at his/her discretion, begin the formal regulatory process to remove the conflict between the rules.

§47-60-5. Borehole Protection.

Protective measures shall be taken to prevent a borehole from acting as a conduit for contamination or becoming a safety hazard until abandonment in accordance with section 19 of this rule.

§47-60-6. Monitoring Well Location And Reporting Requirements.

6.1. Where prior groundwater regulatory agency approval is required monitoring wells shall be installed at the locations indicated on the approved plans and specifications.

6.2. Following installation of a monitoring well, each certified monitoring well driller shall report to the director, on forms provided by the director, the following information within sixty (60) days after completion of the well installation.

6.2.1. The name and address of the person the wells were installed for.

6.2.2. The date the wells were installed.

6.2.3. The latitude and longitude coordinates in degrees, minutes and seconds to the nearest second; and method used to determine such coordinates for each well installed.

6.3. The certified monitoring well driller shall assign each monitoring well a registration number using the following system:

6.3.1. The first group of numbers will be the certified monitoring well drillers certification number followed by a dash (-).

6.3.2. The second group of numbers will represent the number of the monitoring well(s) installed by the driller followed by a dash (-).

6.3.3. The third group of numbers will represent the calendar year in which the well was installed.

Example: The first well drilled by a certified monitoring well driller with certification number 0123 in calendar year 1996 would be: 0123-0001-96.

6.4. The certified monitoring well driller shall permanently affix the registration number onto each well installed.

6.5. Failure to comply with any part of section 6 of this rule may result in enforcement action taken pursuant to section 7 of the "Monitoring Well Regulations", 47 CSR 59.

§47-60-7. Well Riser.

7.1. The well riser for wells constructed in a floodplain or floodway shall terminate a minimum of 2 feet above ground level and be provided with a water tight cap, unless it can be demonstrated that inundation will not occur, except as provided for under subsection 11.6 of this rule.

7.2. Specifications - The riser must consist of materials that will not alter the quality of water samples for the constituents of concern and that are appropriate for the monitoring environment. The riser should have adequate wall thickness and coupling strength to withstand installation and development stresses. Each section of riser should be uncontaminated prior to installation. The minimum nominal internal diameter of the riser should be chosen based on the particular application. However, in most instances, a minimum of 2 inches (50.8 mm) is needed to accommodate sampling devices.

Note: Risers are generally constructed of PVC, stainless steel, fiberglass, or fluoropolymer materials.

7.3. Assembly and Installation - Where the well is to be used for organic water quality monitoring, all riser couplings shall use a coupling method which is water tight and which does not introduce organic compounds to the well. Wells which will not be monitored for organic compounds may use any industry accepted water tight coupling method.

7.4. Inspection - Prior to use, the casings, couplings and other components shall be inspected for cuts, deformities, gouges, deep scratches, damaged ends and other imperfections which could compromise the integrity of the well. Any casing, coupling or component having

such a defect may not be used.

7.5. Risers shall be centered in the borehole, using centralizers if necessary, except in the case of nested monitoring wells.

7.6. A protective cap on the well riser may be necessary during the installation of the annular space seal, the filter pack, the filter pack seal and the ground surface seal to prevent any of these materials from entering the monitoring well.

§47-60-8. Well Screen.

8.1. Specifications - The well screen must consist of materials that will not alter the quality of water samples for the constituents of concern and that are appropriate for the monitoring environment. The well screen should have adequate wall thickness and coupling strength to withstand installation and development stresses. Each section of well screen should be uncontaminated prior to installation. The minimum nominal internal diameter of the well screen should be chosen based on the particular application.

8.2. All monitoring well screens shall be constructed of material which is nonreactive with the constituents in soils and groundwater at the monitoring location. The well screen slot size shall be sized to retain at least 90% of the grain size of the collapsed formation where such is used as filter pack material or at least 90% of the grain size of the filter pack, if material other than collapsed formation is used. In lieu of a sieve analysis or where other well design considerations require a different slot size, a number 10 slot screen size may be used, as a maximum, to retain at least 90% of the filter pack material. Well screen interval lengths should be chosen to adequately monitor the water bearing zone of interest and to comply with section 13 of this rule. Well screens on piezometers installed for the purpose of determining the elevation of the potentiometric surface may not exceed 5 feet in length, except where potentiometric surfaces may fluctuate over greater intervals.

Note: Well screens for wells other than the water table observation wells and piezometers identified above may vary in length.

8.3. Assembly and Installation. All well screens shall be joined to the well riser by methods described in subsection 7.3 of this rule. All joints shall be watertight. Monitoring wells installed in bedrock using an open borehole may be constructed without a well screen.

8.4. Well screens shall be centered in the borehole, using centralizers if necessary, except in the case of nested monitoring wells.

8.5. The bottom portion of each well screen or well must be plugged or capped to prevent oversized material from entering the well.

§47-60-9. Tremie Pipes and Sealing Procedures.

9.1. Materials - The tremie pipe used for the placement of sealant materials shall be one of the following materials.

9.1.1. Metal pipe,

9.1.2. Rubber-covered hose reinforced with braided fiber or steel,

9.1.3. Thermoplastic pipe including but not limited to:

9.1.3.a. Polyvinyl chloride (PVC)

9.1.3.b. Chlorinated polyvinyl chloride (CPVC),

9.1.3.c. Polyethylene (PE),

9.1.3.d. Polybutylene (PB), or

9.1.3.e. Acrylonitrite butadiene styrene (ABS).

The material shall exhibit pressure ratings adequate for the pumping pressures to be used.

9.2. Procedures - This subsection describes ground water regulatory agency approved sealant placement methods when a tremie pipe is used.

Note: These procedures apply to the use of grout or slurry sealant.

9.2.1. The sealant material shall be placed in such a manner as to not disturb the integrity of the filter pack and seal, and to not threaten the integrity of the riser.

9.2.2. When a tremie pipe is used for placement of fluid sealants, the bottom end shall be kept submerged in the sealant material throughout the sealing process.

9.2.3. The sealant material shall be brought up to the ground surface seal. Any settling of the sealant material shall be topped off.

9.2.4. Tremie pipe - gravity - Sealing material may flow by gravity through a funnel or hopper connected to a tremie pipe. The tremie pipe shall be lowered to the bottom of the annular space or borehole to be sealed and the sealing material placed from the bottom up.

9.2.5. Tremie pipe-pumped - Sealing material shall be placed by a pump through a tremie pipe into the annular space or borehole. Tremie pipes used for the placing of pumped slurry or grout should be fitted with a J-hook end or a closed end with side discharge.

Note: The J-hook end or closed end with side discharge of the tremie pipe will direct the flow

of the materials to the side or upward.

§47-60-10. Filter Packs.

10.1. All permanent monitoring wells installed in unconsolidated material and used for the collection of water quality samples shall be constructed with filter packs except as provided in subsection 10.4 of this rule. Permanent monitoring wells installed in bedrock may be constructed with filter packs. When used, the filter pack shall be the only material in contact with the well screen. All commercially prepared filter packs installed in permanent monitoring wells shall meet the requirements in subsection 10.2 of this rule. All other filter packs shall meet the requirements in subsection 10.4 of this rule.

10.2. Specifications - The filter pack shall be a silica based sand or gravel. The sand or gravel used for filter packs shall be hard and durable and shall have an average specific gravity of not less than 2.50. The sand and gravel shall be visibly free of clay, dust and micaceous and organic matter. Not more than 5% of the sand or gravel shall be soluble in a 10% hydrochloric acid solution. Uniformity coefficients for filter pack material shall range from 1 to 3. All filter pack material should be purchased from a reputable supplier who has properly cleaned and bagged the material. In lieu of a sieve analysis, for unconsolidated material which is predominately silt and clay, the filter pack shall be a fine sand. In bedrock, the filter pack shall be a medium or coarse sand or gravel, except in karst or highly fractured bedrock formations where fine sand filter packs may be used. Crushed limestone, dolomite or any material containing clay or any other material that will adversely impact on the performance of the monitoring well may not be used as filter pack.

Note: When installing a monitoring well in karst or highly fractured bedrock, a pre-packed or double sleeved screen may be necessary to hold the filter pack material in place.

10.3. Installation - The filter pack shall generally extend from 6 inches beneath the bottom of the well to between two and five feet above the top of the well screen. For water table observation wells constructed in areas where the depth to water table is less than 7 feet or where discrete monitoring is desired, the required filter pack height above the top of the well screen may be reduced to 6 inches to allow for the required amount of annular space sealant to be placed. To ensure that the filter pack is installed evenly surrounding the well screen and casing over the proper depth interval, a tape measure, measuring rod or similar device shall be used to measure the height of the filter pack. The tape measure, measuring rod or similar device shall be carefully raised and lowered while the filter pack is being installed to identify bridging. If bridging occurs, the filter pack material shall be tamped into place surrounding the well screen and riser, using a measuring rod or similar device. Pre-packed screens may be used if necessary

10.4. Collapsed Formation - Collapsed formation may be used as filter pack material if the collapsed formation will limit the passage of formation fines into the well screen and either an artificial filter pack cannot be installed or the formation grain size is greater than or equal to fine sand sized grains. The grain size distribution of the collapsed formation shall be such that

at least 90% of the formation will be retained by the well screen.

§47-60-11. Sealing Requirements.

11.1. All materials and procedures used in the installation of seals for permanent monitoring wells shall meet the requirements of this section.

11.2. Installation of the Filter Pack Seal - A bentonite chip, pellet or a slurry seal shall be placed in the annulus between the borehole and the riser pipe on top of the secondary or primary filter pack. This seal will retard the movement of cement-based grout backfill into the primary or secondary filter packs. To be effective, the filter pack seal should extend above the filter packs approximately 3 feet or more, but may be less depending on site-specific conditions where discrete sampling is desired or where physical conditions prohibit a longer seal depending on local conditions. The filter pack seal should be installed using a tremie pipe lowered to the top of the filter pack and slowly raised as the bentonite pellets or the slurry fill the annular space. Bentonite pellets may bridge and block the tremie pipe in deep wells. In these cases, pellets may be allowed to free fall into the borehole. As a bentonite pellet seal is poured into the tremie pipe or allowed to free fall into the borehole, a tamper or weighted line may be necessary to tamp pellets into place. If the seal is installed above the water level, water from an uncontaminated source shall be added to allow proper hydration of the annular seal. The tremie pipe or a weighted line inserted through the tremie pipe shall be used to measure the top of the filter pack seal as the work progresses. Sufficient time should be allowed for the bentonite pellet seal to hydrate or the slurry annular seal to expand prior to grouting the remaining annulus. The volume and elevation of the filter pack seal material should be measured and recorded on the well construction diagram.

11.3. Annular Space Seal Specifications - All permanent monitoring wells shall be installed with an annular space seal designed to achieve a permeability of 10^{-5} centimeters per second or less. For permanent monitoring wells constructed with filter packs, the annular space seal shall extend from the filter pack seal to the ground surface seal and should be at least 2 feet in length. For monitoring wells constructed into bedrock formations and without well screens, the annular space seal shall extend from the bottom of the outer casing to the ground surface seal.

11.4. Annular Space Seal Installation - Bentonite chips, pellets or granules with a diameter of 3/8 inches or less shall either be poured freely down the borehole or added through a tremie pipe to seal the annular space. When a tremie pipe is used to place the annular space sealant the procedures in paragraphs 9.2.1 and 9.2.2 of this rule shall be followed.

11.4.1. When grouts or slurries are used to seal the annular space, the material shall be poured freely down a tremie pipe or pumped down a borehole with the use of a tremie pipe. When a tremie pipe is used to place the annular space sealant the procedures of subsection 9.2 of this rule shall be followed.

11.4.2. When any slurry or grout is used, there shall be a 12-hour period between the time the annular space seal is installed and the time the protective ground surface seal is installed. Any settling in the annular space seal shall be topped off before the ground surface seal is installed.

11.4.3. The top of the well casing shall be covered with a protective cap.

11.5. Excavated Wells - For excavated wells, the seal between the protective cover and the riser pipe acts as both the filter pack seal and the annular space seal.

11.6. Ground Surface Seal and Protective Cover Pipe.

11.6.1. Ground surface seal - All permanent monitoring wells shall be constructed with a bentonite-cement grout, neat cement grout, or concrete ground surface seal. The ground surface seal shall extend to a minimum of 30 inches below the land surface, and the top shall be sloped away from the well casing. If the monitoring well depth is such that both a minimum 2 foot annular space seal and a minimum 2.5 foot ground surface seal cannot both be placed, the ground surface seal may be shortened.

11.6.2. Protective cover pipe - The protective cover pipe shall consist of a casing at least 2 inches larger in diameter than the well riser and have a locking cap. The protective cover pipe shall extend from the bottom of the ground surface seal to a minimum of 24 inches above the ground surface except as provided in subsection 11.5 of this rule. The protective cover pipe shall always extend above the top of the well riser. For water table observation wells constructed in areas where the depth to water table is less than 7 feet, the required length (depth) of protective cover shall be reduced and may not extend into the filter pack.

11.7. Ground Surface Seal and Flush Mounted Protective Cover.

11.7.1. Ground surface seal - All permanent monitoring wells with a flush mounted protective cover shall be constructed with a concrete ground surface seal. The ground surface seal shall extend to, but not beyond, the total depth of the flush mounted protective cover. The ground surface seal shall be installed around the flush mounted protective cover and may not be placed between the flush mounted protective cover and the well casing.

11.7.2. Flush mounted protective cover - The flush mounted protective cover shall not be installed in areas subject to ponding or flooding. The flush mounted protective cover lid(s) shall indicate on its outer surface that it is a type of monitoring well as defined in section 3.35 of this rule. A black equilateral triangle inset in a white background is also an acceptable label. If an impervious surface does not exist, an apron shall be created which will support the weight of the traffic in the area. The flush mounted protective cover shall consist of a watertight metal casing with an inside diameter at least 2 inches greater than the inside diameter

of the monitoring well riser. The flush mounted protective cover shall be one continuous metal piece or 2 metal pieces which are joined with a continuous weld. The flush mount protective cover shall be a minimum of 12 inches in length. There may be no more than 8 inches between the top of the monitoring well riser and the top of the flush mounted protective cover after installation. The flush mounted protective cover shall have an exterior flange or lugs. The flush mounted protective cover or the monitoring well shall have a locking mechanism. The monitoring well installed within any flush mounted protective cover shall have a watertight cap.

Note: After removing the watertight cap and prior to taking a head level measurement, a waiting period is recommended to enable the water level to stabilize.

§47-60-12. Drilling Methods and Fluids.

Drilling shall be conducted in a manner such as to minimize the introduction of foreign material into the borehole, produce the least possible disturbance to the formation and permit the proper construction and development of the required diameter well. Only air; water free of bacterial and chemical contamination; or bentonite drilling muds, mixed with water from an uncontaminated source, may be used as drilling fluids. The water used for drilling shall be stored in such a manner as to prevent contamination of the clean water. If air is used as a drilling fluid, the air shall be filtered by an oil-air filter or oil trap to reduce or remove the oil content discharged from the compressor. If water is used, the source of the water shall be reported.

§47-60-13. Cross Contamination.

In areas where contamination is suspected to exist, precautions shall be taken to prevent cross contamination of groundwater bearing zones or uncontaminated zones.

§47-60-14. Disposal and Decontamination.

14.1. In areas where contamination is known to occur, all drill cuttings and fluids and surge and wash waters from borehole and monitoring well construction and development shall be disposed of in a manner which is protective of the waters of the State.

14.2. All borehole and monitoring well construction and development equipment shall be decontaminated as needed to prevent contamination or cross-contamination of boreholes or monitoring wells.

§47-60-15. Borehole Diameter.

15.1. Boreholes in unconsolidated geologic formations - For all permanent monitoring wells in unconsolidated geologic formations, the borehole diameter shall meet the following requirements:

15.1.1. If hollow stem augers are used, their inside working diameter shall

be at least 2 inches greater than the inside diameter of the permanent well casing.

15.1.2. If solid stem augers are used, their outside diameter shall be at least 4 inches greater than the inside diameter of the permanent well casing.

15.1.3. If an air or mud rotary method is used, the borehole diameter shall be at least 4 inches greater than the inside diameter of the permanent well casing. If a temporary outer casing is used, the inside diameter of the temporary outer well casing shall be at least 4 inches greater than the inside diameter of the permanent well casing. The temporary outer casing shall be pulled immediately before, or as, the annular space is sealed, depending on site specific geology.

Note: The dual-tube or triple-tube reverse rotary systems are rotary methods.

15.1.4. If percussion methods, including the rotary wash, wash down and wash bore methods, with a temporary outer casing are used in unconsolidated geologic formations, the inside diameter of the temporary outer casing shall be at least 4 inches greater than the inside diameter of the permanent well casing. The temporary outer casing shall be removed during the sealing of the annular space.

15.2. Boreholes in bedrock geologic formations - For all permanent monitoring wells installed deeper than 2 feet past the top of the bedrock, the borehole diameter shall meet the following requirements:

15.2.1. If an air or mud rotary method is used to construct the monitoring well, the requirements of paragraph 15.1.3. of this rule shall be followed.

15.2.2. If percussion methods are used to construct the monitoring well, the requirements of paragraph 15.1.4. of this rule shall be followed.

§47-60-16. Recovery Wells.

Groundwater quality data from recovery wells may not be acceptable as some recovery wells may not meet the minimum design standards required for monitoring wells. Recovery wells shall be subject to the reporting requirements in section 6 of this rule, documentation requirements in section 18 of this rule, and the abandonment requirements in section 19 of this rule.

§47-60-17. Well Development, Redevelopment and Reconditioning.

All permanent monitoring wells shall be developed according to the requirements of this section, except for excavated wells and wells which are installed for the sole purpose of determining the level of groundwater or the potentiometric surface. Wells sealed with grout or slurry shall be developed after a minimum waiting period of 12 hours after installation is

completed. Development, redevelopment and/or reconditioning operations shall be performed with care so as to prevent damage to the well and any strata surrounding the well. Care is necessary to prevent the spread of contaminants particularly when the well is situated in known or suspected areas of contamination. The goal of well development is to produce water free of sediment and all drill cuttings and drilling fluids. Appropriate methods of well development vary with the type and use of a monitoring well. Development methods that may be acceptable under certain circumstances include:

17.1. Methods for wells that cannot be purged dry - All permanent monitoring wells that cannot be purged dry shall be developed until a minimum of 10 well volumes of water are removed or until the well produces sediment free water. Well volumes shall be calculated in the following manner:

$V_1 + V_2$ = well volume

Where:

V_1 = volume of water in well casing = $3.1416 \times (D_1/2)^2 H_1$
V_2 = volume of water in filter pack = $N \times 3.1416 \times H_2 [(D_3/2)^2 - (D_2/2)^2]$
N = porosity of filter pack
D_1 = inside diameter of well casing
D_2 = outside diameter of well casing
D_3 = diameter of borehole
H_1 = height of water column
-- (Use appropriate H_2) --
H_2 = length of sand used in filter pack and fine sand filter pack seal or the height of the water column in water table observation wells.
-- or --
H_2 = length of filter pack or the height of the water column in water table observation wells.
Note: There are 7.48 gallons per cubic foot.

Use one or more of the following methods to develop a well under this subsection:

17.1.1. Surge and Purge Method - The surge and purge cycle shall consist of several minutes of surging followed by several minutes of purging to remove the material collecting in the bottom of the well. The surging shall move formation water in and out of the well screen. The surging shall be accomplished by using a bailer, surge block or by pumping the well sufficiently to cause a drawdown and then allowing the well to recover and repeating the process. Plungers, bailers, surge blocks, and other surging devices must incorporate safety valves or vents to prevent excessive pressure differentials that could damage casing, screen, or the formation. The positive and negative pressures exerted shall not force contaminants from or into the well bore; cause mechanical damage to the well components; draw annular space or filter pack sealant into the filter pack; or bridge the filter pack with excessive sediments or collapse

the formation.

17.1.2. Over Pumping (Pump Surging Method) - The monitoring well shall be pumped at a rate considerably higher than it would be during normal operation to dislodge fine-grain materials from the filter pack and surrounding strata. This method also requires mechanical surging in order to delete the negative influences associate with one directional movement of water. This method may not be suitable for wells producing large amounts of sediment which could jam or clog a pump. Overpumping can also create a cone of depression in the water table which can draw contaminants to the well.

17.1.3. Air Lift Pumping Method - An air lift pump shall be operated by cycling the air pressure on and off for short periods of time to provide a surging action that will dislodge fine-grained materials from the filter pack and surrounding strata. A steady, low pressure shall be applied to remove the fines that have been drawn into the well by the surging action. Efforts should be made (through the use of a foot valve) to avoid pumping air into the filter pack and adjacent hydrologic unit because the air may lodge there and inhibit future sampling efforts and may also alter ambient water chemistry. Furthermore, application of high air pressures should be avoided to prevent damage to PVC risers, screens, and filter packs. The use of an eductor pipe is recommended. Operational air must be free of oil or other contaminants through use of a coalescing filter.

17.1.4. Well Jetting Method - The well screen area shall be jetted with water using sufficient pressure to achieve the desired effect but limiting force to prevent damage to the well components and surrounding formation. Water added during this development procedure will alter the natural, ambient water quality and may be difficult to remove. Therefore, the water added should be obtained from an uncontaminated source. Water from the monitoring well being developed may also be used if the suspended sediments are first removed.

17.2. Methods for Wells that Can Be Purged Dry. All permanent monitoring wells that can be purged dry shall be developed in a manner which limits agitation by slowly purging the well dry. Any water added for development shall be from an uncontaminated source and an equal volume of water shall be purged upon completion of development.

§47-60-18. Monitoring Well Construction Documentation.

18.1. All permanent monitoring well construction details shall be reported to the person for whom the wells were installed using forms and instructions provided by the director within 60 days after the well has been installed. These forms are to be retained by the person for whom the well was installed for five years beyond the abandonment of the well. These forms are transferable with notification to the proper groundwater regulatory agency. At a minimum, the completed report shall include the following information:

18.1.1. Well location, as determined by paragraph 6.2.3 of this rule,

18.1.2. Well casing material and installation procedures,

18.1.3. Well screen materials and installation procedures,

18.1.4. Filter pack materials, installation procedures and depth to bottom and top of filter pack,

18.1.5. Sealing materials, installation procedures, and depth to bottom and top of seal (i.e. filter pack, annular space, etc,),

18.1.6. Drilling methods and fluids used for installation,

18.1.7. Borehole diameter,

18.1.8. Well development procedures,

18.1.9. Length of screen,

18.1.10. Screen slot size,

18.1.11. Depth of bottom of screen,

18.1.12. Well depth,

18.1.13. Total drilled depth of the borehole,

18.1.14. Well registration number,

18.1.15. Certified Driller and Company Name(s), address(es), and telephone number(s), and

18.1.16. Driller's certification number,

18.2. The certified monitoring well driller shall report to the person for whom the wells were installed any and all decontamination procedures for each borehole.

§47-60-19. Abandonment Requirements.

The following requirements apply to the abandonment of all monitoring wells and all boreholes. The appropriate groundwater regulatory agency may require, by order or other appropriate means, that any borehole or monitoring well be abandoned. The appropriate groundwater regulatory agency shall consider the following factors in determining whether a borehole or monitoring well should be abandoned: purpose, location, groundwater quality, age and condition of the well or borehole potential for groundwater contamination, and well or

borehole construction.

19.1. Timelines for Abandonment.

19.1.1. A borehole shall be abandoned within 3 working days after its use has been discontinued.

19.1.2. Any permanent monitoring well no longer being used to gather information on geologic or groundwater properties shall be abandoned within 60 days after its use has been discontinued.

19.1.3. Any monitoring well or borehole found by the appropriate groundwater regulatory agency to be acting as a conduit for groundwater contamination shall be abandoned within 15 working days after written notification by the appropriate groundwater regulatory agency.

19.1.4. Any monitoring well constructed after the effective date of this rule not meeting the requirements of this rule unless approved by the appropriate groundwater regulatory agency in accordance with section 22 of this rule shall be abated, abandoned or replaced with a monitoring well meeting the requirements of this rule, within 60 days after written notification by the appropriate groundwater regulatory agency that the well is noncomplying.

19.2. Abandonment Procedures.

19.2.1. Boreholes are determined to be low risk, except those at sites containing or formally containing solid or hazardous waste, hazardous materials, or their by-products, or that may be affected by solid or hazardous waste, hazardous materials, or their by-products in the future; or at sites of known or suspected contamination unless otherwise determined to be innocuous; or in situations where water quality in one water bearing zone may be detrimental to another water bearing zone. Low risk boreholes may be abandon by complete filing from bottom to top with drill cuttings, tailings or native materials to restore the borehole to its original geologic setting such that the natural migration of groundwater is not significantly influenced and the borehole has no adverse influence on the environment. All other boreholes shall be abandoned in accordance with subsection 19.3 of this rule.

19.2.2. Monitoring wells with impermeable annular space seals - Monitoring wells known to be constructed with an impermeable annular space seal shall be abandoned according to the requirements of subsection 19.3 of this rule after the protective cover pipe or the flush mounted protective cover and the ground surface seal have been removed and the well riser cut off at least 30 inches below the ground surface. The well riser may be completely removed during abandonment by pulling the well riser, overdrilling around the riser and then pulling the well riser out of the ground, or by drilling out the well riser completely. If the well riser is to be removed, the well should be sealed as the riser is removed, pursuant to

subsection 19.3 of this rule.

19.2.3. Monitoring wells with permeable annular space seals and wells in waste areas - A monitoring well not known to be constructed with an impermeable annular space seal or located in an existing or planned future waste disposal or treatment area shall be abandoned by removing the protective cover pipe or the flush mounted protective cover and the ground surface seal and then completely removing the well riser. The well riser may be completely removed during abandonment by pulling the well riser, overdrilling around the riser and then pulling the well riser out of the ground, or by drilling out the well riser completely. The well riser shall be removed from the well and should be sealed as the riser is removed, pursuant to subsection 19.3 of this rule.

19.3. Sealing requirements - Boreholes and monitoring wells shall be abandoned by complete filling with neat cement grout, bentonite-cement grout, bentonite high-solids grout, concrete, bentonite-sand slurry or sand-cement grout. When a tremie pipe is used to place the sealing material, the procedures of subsection 9.2 of this rule shall be followed. A tremie pipe shall be used to abandon monitoring wells and boreholes greater than 30 feet in depth or with standing water. Monitoring wells and boreholes greater than 100 feet in depth shall be sealed with a tremie pipe-pumped method. A J-hook end or closed end with side discharge is recommended, but not required when placing sealant materials for the abandonment of a borehole. Bentonite may be used as a sealing material without the use of a tremie pipe under the following conditions:

19.3.1. Bentonite or bentonite mixed sand consisting of 80% sand and 20% bentonite by volume may be used for abandonment of boreholes and monitoring wells less than 30 feet deep where there is no standing water.

19.3.2. Bentonite chips or bentonite pellets may be used for abandonment of boreholes and monitoring wells less than 50 feet deep and where the depth of standing water is less than 30 feet, provided that the pellets or chips are smaller than 1/5 the diameter of the hole or the annular space.

19.3.3. Bentonite chips or bentonite pellets may be used for abandonment of boreholes and monitoring wells which are greater than 4 inches in diameter and less than 250 feet deep and where the depth of standing water is less than 150 feet, provided that the pellets or chips are smaller than 1/5 the diameter of the hole or the annular space.

19.4. Sealant Settlement - Any settling of the sealant material shall be topped off. Sealing material may be terminated 30 inches below the ground surface in agricultural areas to avoid interference with agricultural activities. A native soil plug shall be placed on top of the settled sealing material in such cases.

19.5. Abandonment Documentation - All borehole and permanent monitoring well abandonments shall be reported to the appropriate groundwater regulatory agency within 60 days

of the abandonment on forms supplied by the appropriate groundwater regulatory agency. In addition to the information required on the form, the person performing the abandonment shall report any decontamination procedures used between borehole and well abandonments.

§47-60-20. Driven Point Wells.

Driven point wells with contaminant compatible drive pipes and well screens may be used as permanent monitoring wells if prior groundwater regulatory agency approval is obtained. Prior approval is not necessary for driven point wells installed in the backfill surrounding underground storage tanks used solely to determine the water table elevation in the tank pit for tank tightness testing purposes. Written documentation shall be supplied to the appropriate groundwater regulatory agency prior to installation indicating:

20.1. That the well is to be used only for water table elevation measurements or to monitor for parameters for which the well casing and screen material will not interfere with the analytical results;

20.2. That the well will not provide a conduit for contaminants to enter the groundwater; and

20.3. That information on subsurface stratigraphy is not needed. In situations where subsurface geologic information is needed, a separate borehole shall be constructed to collect the required data.

§47-60-21. Temporary Monitoring Wells.

Temporary monitoring wells may be installed according to alternate standards than specified for permanent monitoring wells. Any temporary monitoring well construction shall be approved by the appropriate groundwater regulatory agency prior to its installation. All temporary monitoring wells shall be abandoned in accordance with section 19 of this rule within 120 days after their installation unless an exception is allowed under section 22 of this rule..

§47-60-22. Special Circumstances and Exceptions.

22.1. The appropriate groundwater regulatory agency may require or approve more restrictive or alternative well material, assembly, installation, development or abandonment procedures if the contaminant concentrations or geologic setting require alternative construction. Prior written approval is required before any alternative materials are used in monitoring well installation.

22.2. Exceptions to the requirements of this rule may be approved by the appropriate groundwater regulatory agency prior to installation or abandonment. An exception request shall state the reasons why compliance with the rule requirements is infeasible or unnecessary. The appropriate groundwater regulatory agency may conditionally approve an exception by requiring

materials or procedures which safeguard against contamination and result in monitoring well construction which is substantially equivalent to the requirements of this rule. Failure to comply with the conditions of an exception voids the appropriate groundwater regulatory agency's approval of the exception.

§47-60-23. Enforcement.

23.1. Any person who violates this rule shall be subject to civil administrative penalties, civil or criminal penalties, enforcement orders, and procedures as set forth in section 10 of the Groundwater Protection Act, WV Code §22-12-10 and 47 CSR 59 "Monitoring Well Regulations".

23.2. The appeal and review procedures set forth in section 11 of the Groundwater Protection Act, WV Code §22-12-11, shall be applicable to actions arising under this rule.

SENATE BILL NO. 180

(By Senators Ross, Anderson, Boley, Buckalew, Grubb and Macnaughtan)

[Introduced January 29,1996; referred to the Committee on NATURAL RESOURCES THE JUDICIARY.

47-60

A BILL to amend and reenact section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, relating to authorizing the division of environmental protection to promulgate legislative rules relating to monitoring well design standards.

Be it enacted by the Legislature of West Virginia:

That section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended and reenacted, to read as follows:

ARTICLE 3. AUTHORIZATION FOR BUREAU OF ENVIRONMENT TO PROMULGATE LEGISLATIVE RULES.

§64-3-1. Division of environmental protection.

(a) The legislative rules filed in the state register

on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (requirements for determining conformity of general federal actions to applicable air quality implementation plans (general conformity), 45 CSR 35), are authorized.

(b) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (emission standards for hazardous air pollutants pursuant to 40 CFR Part 63, 45 CSR 34), are authorized.

(c) The legislative rules filed in the state register

on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section five, article twenty, chapter sixteen, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (standards of performance for new stationary sources, 45 CSR 16), are authorized with the amendment set forth below:

"On page two, section 4, subsection 4.1, subdivision 4.1.i, by striking out 'Part 60.195(b)' and inserting in lieu thereof 'Part 60.194(d)';

On page two, section 4, subsection 4.1., subdivision 4.1.k, by striking out 'Part 60.335(a)(1)(i)' and inserting in lieu thereof 'Part 60.335(f)(1)';

And,

On page two, section 4, after subdivision 'k', by inserting a new subdivision to read as follows:

'l. Part 60.335(f)(1).'"

(d) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section

four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of December, one thousand nine hundred ninety-four, relating to the division of environmental protection (permits for construction and major modification of major stationary sources of air pollution for the prevention of significant deterioration, 45 CSR 14), are authorized.

(e) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (requirements for determining conformity of transportation plans, programs and projects developed, funded or approved under title 23 U.S.C. or the federal transit act, to applicable air quality implementation plans, 45 CSR 36), are authorized.

(f) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-ninth day of December, one thousand nine hundred ninety-four, relating to the division of environmental protection (to prevent and control air pollution from the operation of coal preparation plants and coal handling operations, 45 CSR 5), are authorized.

(g) The legislative rules filed in the state register on the thirteenth day of September, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twelfth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (to prevent and control air pollution from hazardous waste treatment, storage or disposal facilities, 45 CSR 25), are authorized.

(h) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (acid rain provisions and permits, 45 CSR 33), are authorized.

(i) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section two, article one, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (emission standards for hazardous air pollutants pursuant to 40 CFR Part 61, 45 CSR 15), are authorized.

(j) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred

ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (provisions for determination of compliance with air quality management rules, 45 CSR 38), are authorized.

(k) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section five, article twenty, chapter sixteen, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (to prevent and control air pollution from combustion of refuse, 45 CSR 6), are authorized.

(l) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article fourteen, chapter twenty-two, of this code,

modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the fourth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (dam safety, 47 CSR 34), are authorized with the amendments set forth below:

On page 9, section §47-34-3, by striking out 3.5.2.c.A, and substituting therefor the following:

"3.5.2.c.A. An impoundment exceeding forty (40) feet in height or four hundred (400) acre-feet storage volume shall not be classified as a Class 3 dam."

On pages 17 and 18, section §47-34-7, at the end of section 7.1.1.b.C. by adding the following:

"The design precipitation for a Class 3 dam may be reduced based on Risk Assessment pursuant to paragraph 3.5.4 of this rule, but in no case to less than a P100 rainfall of six (6) hours in duration."

On page 40, section §47-34-13, by striking out section 13.2 and substituting therefor the following:

"Performance Requirements - All dams completed before July 1, 1973, shall meet the applicable design requirements of Section 7 of this rule. Those dams which do not meet the applicable design requirement of Section 7 of this rule

shall be modified, breached, removed, or properly abandoned pursuant to the provisions of this rule. In developing the required plans, specifications, and documentation necessary to bring the structure into conformity with section 7 of this rule, the design engineer may consider in his submitted analyses, peculiarities and local conditions for each impounding structure with recognition of the many factors involved, some of which may not be precisely known. Existing construction documentation and the historical performance of the structure including documented storms and spillway flows may be considered by the engineer as part of the evaluation of the structure. Upon approval by the Director of the plans, specifications, and documentation submitted by the engineer, the Director may issue a certificate of approval."

(m) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section fifteen, article one, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the eleventh day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection

(regulations governing environmental laboratories certification and standards of performance, 47 CSR 32), are authorized.

(n) The legislative rules filed in the state register on the twenty-eighth day of February, one thousand nine hundred ninety-four, authorized under the authority of section three, article two, chapter twenty-two-c, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-eighth day of July, one thousand nine hundred ninety-four, relating to the division of environmental protection (state water pollution control revolving fund program, 47 CSR 31), are authorized.

(o) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section six, article seventeen, chapter twenty-two, of this code, relating to the division of environmental protection (underground storage tanks, 47 CSR 36), are authorized.

(p) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section six, article five-h, chapter twenty, of this code, modified by

the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the thirteenth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (hazardous waste management regulations, 47 CSR 35), are authorized.

(q) The legislative rules filed in the state register on the twenty-second day of July, one thousand nine hundred ninety-four, authorized under the authority of section four, article three, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-ninth day of August, one thousand nine hundred ninety-four, relating to the division of environmental protection (standards for certification of blasters-surface coal mines, 38 CSR 2C), are authorized with the amendments set forth below:

On page 4, section 38.2C.4, after the words "Form MR-30-TR." by inserting a second paragraph to read as follows:

"In lieu of completing the training program, the applicant for certification or re-certification may complete a self-study course using the study guide and

other materials available from the Division of Environmental Protection."

On page 8, subsection 8.2, after the words "refresher training course" by inserting the phrase "or complete the self-study course."

On page 8 at subsection 10.1 by striking out the phrase "a cessation order and/or take other action as provided in West Virginia Code 22-3-16 and 17" and the phrase "the provisions of West Virginia Code 22-3-1 et seq., rules promulgated under that article, or".

On page 9, subsection 11.1, by striking out the subsection and inserting in lieu thereof a new subsection to read as follows: "11.1. **Suspension** - Upon service of a written notice of violation by the Director to a certified blaster, the Director may suspend his or her certification. Prior to the issuance of such an order, the certified blaster shall be granted a hearing before the Director to show cause why his or her certification should not be suspended."

On page 9, subsection 11.2, by striking out the phrase "or cessation order" in the first sentence.

On page 9, Section 12, by striking out the phrase "cessation order".

(r) The legislative rules filed in the state register

on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section nine, article three, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the sixth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (rules and regulations relating to abandoned mine lands and reclamation, 38 CSR 2D), are authorized.

(s) The Legislature hereby authorizes and directs the division of environmental protection to promulgate the legislative rules filed in the state register on February, seventh, one thousand nine hundred ninety-five, authorized under the authority of section five, article twenty, chapter sixteen, of this code, relating to the division of environmental protection (prevention and control of particulate air pollution from combustion of fuel in indirect heat exchangers, 45 CSR 2), effective the first day of May, one thousand nine hundred ninety-five, with the amendments set forth below:

On page eight, section 3.4(e) after the word "operated" by adding the words "at normal operating loads";

And,

On page thirteen, section 9.4 by striking the words "monthly or", and, following the words "quarterly basis" by striking the word "as"; and by inserting the words "unless otherwise" following the words "quarterly basis".

And,

On page thirteen, by creating a new section, designated section "45.2.10. Variances.

10.1. In the event of an unavoidable shortage of fuel having characteristics or specifications necessary for a fuel burning unit to comply with the opacity standards set forth in section 3 or any emergency situation or condition creating a threat to public safety or welfare, the Director may grant an exception to the otherwise applicable visible emission standards for a period not to exceed fifteen (15) days, provided that visible emissions during the exception period do not exceed a maximum six (6) minute average of thirty (30) percent and that a reasonable demonstration is made by the owner or operator that the emission standards under section 4 of this rule will not be exceeded during the exemption period."

10.2. In the event a fuel burning unit employing a flue gas desulphurization system must by-pass such system because of necessary planned or unplanned maintenance, visible emissions may not exceed twenty percent (20%)

opacity during such period of maintenance. The Director may require advance notice of necessary planned maintenance, including a description of the necessity of the maintenance activity and its expected duration and may limit the duration of the variance or the amount of the excess opacity exception herein allowed. The Director shall be notified of unplanned maintenance and may limit the duration of the variance or the amount of excess opacity exception allowed during unplanned maintenance.

And, by renumbering subsequent sections.

(t) The legislative rules filed in the state register on the nineteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article three, chapter twenty-two, of this code, relating to the division of environmental protection (surface mining and reclamation regulations, 38 CSR 2), are authorized "with the amendments set forth below"

On pages 2 and 3, by striking out subsections 1.6, 1.7 and 1.8 in their entirety;

On page 6, by inserting a new subsection 2.20, to read as follows, and renumbering subsequent subsections;

"Chemical Treatment means - the treatment of water from a surface coal mining operation using chemical reagents such as but not limited to sodium hydroxide,

calcium carbonate, or anhydrous ammonia for purposes of meeting applicable state and federal effluent limitations. Chemical treatment does not include passive treatment systems such as but not limited to limestone drains, wetlands, alkaline addition, application of flyash, agricultural lime, or injection of flyash, limestone, or other minerals into underground coal operations."

On page 16, section 2, by striking out subsection 2.92 and renumbering the subsequent subsections.

On page 25, by striking the second paragraph of subsection 3.1 (o) and inserting in lieu thereof a new second paragraph 3.1 of subsection 3.1 (o), to read as follows: "Any permit application which references an approved centralized ownership and control file may be determined to be complete and accurate for the purposes of this subsection. Each centralized ownership and control file shall at a minimum:"

On page 63, by striking out subsection 3.25 (e).

On page 63, by striking out the first sentence in subsection 3.26, and inserting in lieu thereof the following:

"(a) All changes including name changes, replacements, and additions to the ownership or control data relative to a permittee or assignee who will function as an operator

pursuant to the provisions of paragraph (c) of subsection 3.25 of this rule shall be reported to the Director."

On page 64, after subsection 3.26 (a) (5) by inserting a new subsection 3.26 (a) (6) to read as follows:

"(6) In the event that a permittee or operator has incurred no changes in its ownership and control information and therefore has not been obligated to file a report within any consecutive twelve-month period, that permittee or operator is required to notify the Director in writing that no changes to the information required by paragraphs (b), (c), (d) and (i) of subsection 3.1 of this rule have occurred."

On page 64, by striking out subsection 3.27 (a) and inserting in lieu thereof the following:

"(a) All active surface mining operations shall be subject to the renewal requirements and provisions for issuance of a renewal discussed in Section 19 of the Act: *Provided,* That the Director may waive the requirement for renewal if the permittee certifies in writing that all coal extraction is completed, that all backfilling and regrading will be completed within sixty (60) days prior to the expiration date of the permit, and that an application for Phase I bond release will be filed prior to the expiration date of the permit. Failure of the permittee complete

backfilling and regrading within sixty (60) days prior to the expiration date of the permit will nullify the waiver.

Those operations which have been granted inactive status in accordance with subsection 14.11 of this rule shall also be subject to the renewal requirements of Section 19 of the Act.

Applications for renewal shall be filed on forms provided by the Director and shall contain at a minimum the following information:"

On page 79, by striking out subsection 3.32 (i) and renumbering the remaining subsections.

On page 80, subsection 3.34 (b) after the word "criteria" by inserting the words "paragraph (b) of subsection 3.32 of this section";

On page 80, by striking out subsection 3.34 (b) (3) and substituting therefor a new subsection 3.34 (b) (3), to read as follows: "(3) The permittee was linked to a violation, penalty or fee through ownership or control, under the violation review criteria, paragraph (b) of subsection 3.32 of this section at the time the permit was issued and an ownership or control link between the permittee and the person responsible for the violation, penalty or fee still exists, or when the link was severed the permittee continues to be responsible for the

violation, penalty or fee."

On page 82, by striking out subsection 3.34 (g) and substituting therefor a new subparagraph (g) to read as follows:

"(g) For purposes of this subsection, a permit is issued when it is originally approved, as well as when a transfer, assignment, or sale of permit rights is approved pursuant to paragraphs (a) or (c), subsection 3.25 of this rule, or where a permit is revised pursuant to subsection 3.26 of this rule."

On page 86, at the end of subsection 4.4, by adding the following sentence: "Prospecting roads are to be designed, constructed, maintained, and reclaimed in accordance with the provisions of subsection 13.6 of this rule."

On page 88, by inserting a new subsection 4.7 (a) (1) to read as follows: (1) Minimize downstream sedimentation and flooding and renumbering the remaining subsections.

On page 92, subsection 4.12, by inserting a new sentence between the second and third sentence which reads as follows: "Where the certification statement indicates a change from the design standards or construction requirements approved in the permit, such changes will be documented in as-built plans and submitted for approval to

the Director as a permit revision."

On Page 148, section 11.6 (a) in the underscored language, after the word, "completed" by inserting the words "or nearly completed".

On Page 223, by striking out subsection 14.14 (g) (8) and inserting in lieu thereof a new subsection 14.14 (g) (8), to read as follows: "(8) Surface water runoff from areas above and adjacent to the fill shall be diverted into properly designed and constructed stabilized diversion channels which have been designed using best current technology to safely pass the peak runoff from a 100 year, 24-hour precipitation event. The channel shall be designed and constructed to ensure stability of the fill, control erosion, and minimize water infiltration into the fill."

On Page 232, by inserting a new subsection, designated subsection 14.19 (d) to read as follows: "(d) Timber from clearing and grubbing operations may be wind-rowed below the projected toe of the outslope in a manner that will provide shelter and habitat for game and non-game wildlife and provide for enhanced sediment control. These materials may not be placed in natural water courses or where they will be covered by spoil material at the toe of the outslope. The wind-rows must be of relatively uniform height and width and must be more or less evenly

distributed along the lower reaches and within the permit area."

On Page 240, subsection 17.1, in the first sentence, after the words "mining and reclamation," by striking out the remainder of the paragraph and substituting therefor the following: "required by the Act and these Rules, including the engineering analyses and designs; the development of cross-section maps and plans; the geologic drilling and statement of results of test borings and core samplings; preblast surveys; the collection of site-specific resource information and production of protection and enhancement plans for fish and wildlife habitats and other environmental values; and the collection of archaeological and historical information; and any other archaeological and historical information required by the federal department of the interior and the preparation of plans that may be necessitated thereby; and the director shall provide or assume the cost of training coal operators that meet the qualifications concerning the preparation of permit applications and compliance with the regulatory program, and shall ensure that qualified coal operators are aware of the assistance available under this section.

On Page 240, subsection 17.1, after the first paragraph by inserting a new paragraph, to read as follows:

"The Director will develop a procedure for the interstate coordination and exchange of information collected under the Small Operators Assistance Program."

On Page 241, by striking out subsection 17.4 in its entirety and substituting therefor the following: "17.4 Request for Assistance. Each applicant requesting assistance shall provide information on forms provided by the director in an application that shall be clear and concise and shall be provided in a format prescribed by the Director and/or a format required by the Federal Office of Surface Mining Reclamation and Enforcement."

On Page 249, subsection 17.7 (a) (4), after the words "twelve (12) month period" by striking the remainder of the sentence and inserting in lieu thereof the words "immediately following permit issuance."

On page 273, subsection 20.6 (a), after the word "first" by striking out the words "thirty (30)" and inserting in lieu thereof the word "fifteen".

On page 273, subsection 20.6 (c), after the words "date of the" by striking out the words "Assessment Officer receiving the finding specified in paragraph (a) of this subsection." and inserting in lieu thereof the words "issuance of a notice or order";

On page 274, subsection 20.6 (d), by striking out the first sentence, and inserting in lieu thereof the following: "The time and place of an informal assessment conference shall be posted at the Department of Environmental Protection Office nearest to the operation.

(u) The legislative rules filed in the state register on the twenty-seventh day of July, one thousand nine hundred ninety-five, authorized under the authority of section five, article twelve, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the seventeenth day of January, one thousand nine hundred ninety-six, relating to the division of environmental protection (monitoring well design standards, 47 CSR 60), are authorized.

NOTE: The purpose of this bill is to authorize the Division of Environmental Protection to promulgate legislative rules relating to monitoring well design standards.

Strike-throughs indicate language that would be stricken from the present law, and underscoring indicates new language that would be added.

4250

H. B. 4250

(By Delegates Douglas, Gallagher, Faircloth, Compton, Linch and Riggs)

(Introduced January 29, 1996; referred to the Committee on the Judiciary)

47-60

A BILL to amend and reenact section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, relating to authorizing the division of environmental protection to promulgate legislative rules relating to monitoring well design standards.

Be it enacted by the Legislature of West Virginia:

That section one, article three, chapter sixty-four of the code of West Virginia, one thousand nine hundred thirty-one, as amended, be amended and reenacted, to read as follows:

ARTICLE 3. AUTHORIZATION FOR BUREAU OF ENVIRONMENT TO PROMULGATE LEGISLATIVE RULES.

§64-3-1. Division of environmental protection.

(a) The legislative rules filed in the state register

4250

on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (requirements for determining conformity of general federal actions to applicable air quality implementation plans (general conformity), 45 CSR 35), are authorized.

(b) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (emission standards for hazardous air pollutants pursuant to 40 CFR Part 63, 45 CSR 34), are authorized.

(c) The legislative rules filed in the state register

on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section five, article twenty, chapter sixteen, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (standards of performance for new stationary sources, 45 CSR 16), are authorized with the amendment set forth below:

"On page two, section 4, subsection 4.1, subdivision 4.1.i, by striking out 'Part 60.195(b)' and inserting in lieu thereof 'Part 60.194(d)';

On page two, section 4, subsection 4.1., subdivision 4.1.k, by striking out 'Part 60.335(a)(1)(i)' and inserting in lieu thereof 'Part 60.335(f)(1)';

And,

On page two, section 4, after subdivision 'k', by inserting a new subdivision to read as follows:

'l. Part 60.335(f)(1).'"

(d) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section

four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the nineteenth day of December, one thousand nine hundred ninety-four, relating to the division of environmental protection (permits for construction and major modification of major stationary sources of air pollution for the prevention of significant deterioration, 45 CSR 14), are authorized.

(e) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (requirements for determining conformity of transportation plans, programs and projects developed, funded or approved under title 23 U.S.C. or the federal transit act, to applicable air quality implementation plans, 45 CSR 36), are authorized.

(f) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-ninth day of December, one thousand nine hundred ninety-four, relating to the division of environmental protection (to prevent and control air pollution from the operation of coal preparation plants and coal handling operations, 45 CSR 5), are authorized.

(g) The legislative rules filed in the state register on the thirteenth day of September, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twelfth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (to prevent and control air pollution from hazardous waste treatment, storage or disposal facilities, 45 CSR 25), are authorized.

(h) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (acid rain provisions and permits, 45 CSR 33), are authorized.

(i) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section two, article one, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (emission standards for hazardous air pollutants pursuant to 40 CFR Part 61, 45 CSR 15), are authorized.

(j) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred

ninety-four, authorized under the authority of section four, article five, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (provisions for determination of compliance with air quality management rules, 45 CSR 38), are authorized.

(K) The legislative rules filed in the state register on the twelfth day of August, one thousand nine hundred ninety-four, authorized under the authority of section five, article twenty, chapter sixteen, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-third day of November, one thousand nine hundred ninety-four, relating to the division of environmental protection (to prevent and control air pollution from combustion of refuse, 45 CSR 6), are authorized.

(l) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article fourteen, chapter twenty-two, of this code,

modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the fourth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (dam safety, 47 CSR 34), are authorized with the amendments set forth below:

On page 9, section §47-34-3, by striking out 3.5.2.c.A, and substituting therefor the following:

"3.5.2.c.A. An impoundment exceeding forty (40) feet in height or four hundred (400) acre-feet storage volume shall not be classified as a Class 3 dam."

On pages 17 and 18, section §47-34-7, at the end of section 7.1.1.b.C. by adding the following:

"The design precipitation for a Class 3 dam may be reduced based on Risk Assessment pursuant to paragraph 3.5.4 of this rule, but in no case to less than a P100 rainfall of six (6) hours in duration."

On page 40, section §47-34-13, by striking out section 13.2 and substituting therefor the following:

"Performance Requirements - All dams completed before July 1, 1973, shall meet the applicable design requirements of Section 7 of this rule. Those dams which do not meet the applicable design requirement of Section 7 of this rule

shall be modified, breached, removed, or properly abandoned pursuant to the provisions of this rule. In developing the required plans, specifications, and documentation necessary to bring the structure into conformity with section 7 of this rule, the design engineer may consider in his submitted analyses, peculiarities and local conditions for each impounding structure with recognition of the many factors involved, some of which may not be precisely known. Existing construction documentation and the historical performance of the structure including documented storms and spillway flows may be considered by the engineer as part of the evaluation of the structure. Upon approval by the Director of the plans, specifications, and documentation submitted by the engineer, the Director may issue a certificate of approval."

(m) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section fifteen, article one, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the eleventh day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection

(regulations governing environmental laboratories certification and standards of performance, 47 CSR 32), are authorized.

(n) The legislative rules filed in the state register on the twenty-eighth day of February, one thousand nine hundred ninety-four, authorized under the authority of section three, article two, chapter twenty-two-c, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-eighth day of July, one thousand nine hundred ninety-four, relating to the division of environmental protection (state water pollution control revolving fund program, 47 CSR 31), are authorized.

(o) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section six, article seventeen, chapter twenty-two, of this code, relating to the division of environmental protection (underground storage tanks, 47 CSR 36), are authorized.

(p) The legislative rules filed in the state register on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section six, article five-h, chapter twenty, of this code, modified by

the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the thirteenth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (hazardous waste management regulations, 47 CSR 35), are authorized.

(q) The legislative rules filed in the state register on the twenty-second day of July, one thousand nine hundred ninety-four, authorized under the authority of section four, article three, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the twenty-ninth day of August, one thousand nine hundred ninety-four, relating to the division of environmental protection (standards for certification of blasters-surface coal mines, 38 CSR 2C), are authorized with the amendments set forth below:

On page 4, section 38.2C.4, after the words "Form MR-30-TR." by inserting a second paragraph to read as follows:

"In lieu of completing the training program, the applicant for certification or re-certification may complete a self-study course using the study guide and

other materials available from the Division of Environmental Protection."

On page 8, subsection 8.2, after the words "refresher training course" by inserting the phrase "or complete the self-study course."

On page 8 at subsection 10.1 by striking out the phrase "a cessation order and/or take other action as provided in West Virginia Code 22-3-16 and 17" and the phrase "the provisions of West Virginia Code 22-3-1 et seq., rules promulgated under that article, or".

On page 9, subsection 11.1, by striking out the subsection and inserting in lieu thereof a new subsection to read as follows: "11.1. **Suspension** - Upon service of a written notice of violation by the Director to a certified blaster, the Director may suspend his or her certification. Prior to the issuance of such an order, the certified blaster shall be granted a hearing before the Director to show cause why his or her certification should not be suspended."

On page 9, subsection 11.2, by striking out the phrase "or cessation order" in the first sentence.

On page 9, Section 12, by striking out the phrase "cessation order".

(r) The legislative rules filed in the state register

on the fifteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section nine, article three, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the sixth day of January, one thousand nine hundred ninety-five, relating to the division of environmental protection (rules and regulations relating to abandoned mine lands and reclamation, 38 CSR 2D), are authorized.

(s) The Legislature hereby authorizes and directs the division of environmental protection to promulgate the legislative rules filed in the state register on February, seventh, one thousand nine hundred ninety-five, authorized under the authority of section five, article twenty, chapter sixteen, of this code, relating to the division of environmental protection (prevention and control of particulate air pollution from combustion of fuel in indirect heat exchangers, 45 CSR 2), effective the first day of May, one thousand nine hundred ninety-five, with the amendments set forth below:

On page eight, section 3.4(e) after the word "operated" by adding the words "at normal operating loads";

And,

On page thirteen, section 9.4 by striking the words "monthly or", and, following the words "quarterly basis" by striking the word "as"; and by inserting the words "unless otherwise" following the words "quarterly basis".

And,

On page thirteen, by creating a new section, designated section "45.2.10. Variances.

10.1. In the event of an unavoidable shortage of fuel having characteristics or specifications necessary for a fuel burning unit to comply with the opacity standards set forth in section 3 or any emergency situation or condition creating a threat to public safety or welfare, the Director may grant an exception to the otherwise applicable visible emission standards for a period not to exceed fifteen (15) days, provided that visible emissions during the exception period do not exceed a maximum six (6) minute average of thirty (30) percent and that a reasonable demonstration is made by the owner or operator that the emission standards under section 4 of this rule will not be exceeded during the exemption period."

10.2. In the event a fuel burning unit employing a flue gas desulphurization system must by-pass such system because of necessary planned or unplanned maintenance, visible emissions may not exceed twenty percent (20%)

opacity during such period of maintenance. The Director may require advance notice of necessary planned maintenance, including a description of the necessity of the maintenance activity and its expected duration and may limit the duration of the variance or the amount of the excess opacity exception herein allowed. The Director shall be notified of unplanned maintenance and may limit the duration of the variance or the amount of excess opacity exception allowed during unplanned maintenance.

And, by renumbering subsequent sections.

(t) The legislative rules filed in the state register on the nineteenth day of August, one thousand nine hundred ninety-four, authorized under the authority of section four, article three, chapter twenty-two, of this code, relating to the division of environmental protection (surface mining and reclamation regulations, 38 CSR 2), are authorized "with the amendments set forth below"

On pages 2 and 3, by striking out subsections 1.6, 1.7 and 1.8 in their entirety;

On page 6, by inserting a new subsection 2.20, to read as follows, and renumbering subsequent subsections;

"Chemical Treatment means - the treatment of water from a surface coal mining operation using chemical reagents such as but not limited to sodium hydroxide,

calcium carbonate, or anhydrous ammonia for purposes of meeting applicable state and federal effluent limitations. Chemical treatment does not include passive treatment systems such as but not limited to limestone drains, wetlands, alkaline addition, application of flyash, agricultural lime, or injection of flyash, limestone, or other minerals into underground coal operations."

On page 16, section 2, by striking out subsection 2.92 and renumbering the subsequent subsections.

On page 25, by striking the second paragraph of subsection 3.1 (o) and inserting in lieu thereof a new second paragraph 3.1 of subsection 3.1 (o), to read as follows: "Any permit application which references an approved centralized ownership and control file may be determined to be complete and accurate for the purposes of this subsection. Each centralized ownership and control file shall at a minimum:"

On page 63, by striking out subsection 3.25 (e).

On page 63, by striking out the first sentence in subsection 3.26, and inserting in lieu thereof the following:

"(a) All changes including name changes, replacements, and additions to the ownership or control data relative to a permittee or assignee who will function as an operator

pursuant to the provisions of paragraph (c) of subsection 3.25 of this rule shall be reported to the Director."

On page 64, after subsection 3.26 (a) (5) by inserting a new subsection 3.26 (a) (6) to read as follows:

"(6) In the event that a permittee or operator has incurred no changes in its ownership and control information and therefore has not been obligated to file a report within any consecutive twelve-month period, that permittee or operator is required to notify the Director in writing that no changes to the information required by paragraphs (b), (c), (d) and (i) of subsection 3.1 of this rule have occurred."

On page 64, by striking out subsection 3.27 (a) and inserting in lieu thereof the following:

"(a) All active surface mining operations shall be subject to the renewal requirements and provisions for issuance of a renewal discussed in Section 19 of the Act: *Provided,* That the Director may waive the requirement for renewal if the permittee certifies in writing that all coal extraction is completed, that all backfilling and regrading will be completed within sixty (60) days prior to the expiration date of the permit, and that an application for Phase I bond release will be filed prior to the expiration date of the permit. Failure of the permittee complete

backfilling and regrading within sixty (60) days prior to the expiration date of the permit will nullify the waiver.

Those operations which have been granted inactive status in accordance with subsection 14.11 of this rule shall also be subject to the renewal requirements of Section 19 of the Act.

Applications for renewal shall be filed on forms provided by the Director and shall contain at a minimum the following information:"

On page 79, by striking out subsection 3.32 (i) and renumbering the remaining subsections.

On page 80, subsection 3.34 (b) after the word "criteria" by inserting the words "paragraph (b) of subsection 3.32 of this section";

On page 80, by striking out subsection 3.34 (b) (3) and substituting therefor a new subsection 3.34 (b) (3), to read as follows: "(3) The permittee was linked to a violation, penalty or fee through ownership or control, under the violation review criteria, paragraph (b) of subsection 3.32 of this section at the time the permit was issued and an ownership or control link between the permittee and the person responsible for the violation, penalty or fee still exists, or when the link was severed the permittee continues to be responsible for the

violation, penalty or fee."

On page 82, by striking out subsection 3.34 (g) and substituting therefor a new subparagraph (g) to read as follows:

"(g) For purposes of this subsection, a permit is issued when it is originally approved, as well as when a transfer, assignment, or sale of permit rights is approved pursuant to paragraphs (a) or (c), subsection 3.25 of this rule, or where a permit is revised pursuant to subsection 3.26 of this rule."

On page 86, at the end of subsection 4.4, by adding the following sentence: "Prospecting roads are to be designed, constructed, maintained, and reclaimed in accordance with the provisions of subsection 13.6 of this rule."

On page 88, by inserting a new subsection 4.7 (a) (1) to read as follows: (1) Minimize downstream sedimentation and flooding and renumbering the remaining subsections.

On page 92, subsection 4.12, by inserting a new sentence between the second and third sentence which reads as follows: "Where the certification statement indicates a change from the design standards or construction requirements approved in the permit, such changes will be documented in as-built plans and submitted for approval to

the Director as a permit revision."

On Page 148, section 11.6 (a) in the underscored language, after the word, "completed" by inserting the words "or nearly completed".

On Page 223, by striking out subsection 14.14 (g) (8) and inserting in lieu thereof a new subsection 14.14 (g) (8), to read as follows: "(8) Surface water runoff from areas above and adjacent to the fill shall be diverted into properly designed and constructed stabilized diversion channels which have been designed using best current technology to safely pass the peak runoff from a 100 year, 24-hour precipitation event. The channel shall be designed and constructed to ensure stability of the fill, control erosion, and minimize water infiltration into the fill."

On Page 232, by inserting a new subsection, designated subsection 14.19 (d) to read as follows: "(d) Timber from clearing and grubbing operations may be wind-rowed below the projected toe of the outslope in a manner that will provide shelter and habitat for game and non-game wildlife and provide for enhanced sediment control. These materials may not be placed in natural water courses or where they will be covered by spoil material at the toe of the outslope. The wind-rows must be of relatively uniform height and width and must be more or less evenly

distributed along the lower reaches and within the permit area."

On Page 240, subsection 17.1, in the first sentence, after the words "mining and reclamation," by striking out the remainder of the paragraph and substituting therefor the following: "required by the Act and these Rules, including the engineering analyses and designs; the development of cross-section maps and plans; the geologic drilling and statement of results of test borings and core samplings; preblast surveys; the collection of site-specific resource information and production of protection and enhancement plans for fish and wildlife habitats and other environmental values; and the collection of archaeological and historical information; and any other archaeological and historical information required by the federal department of the interior and the preparation of plans that may be necessitated thereby; and the director shall provide or assume the cost of training coal operators that meet the qualifications concerning the preparation of permit applications and compliance with the regulatory program, and shall ensure that qualified coal operators are aware of the assistance available under this section.

On Page 240, subsection 17.1, after the first paragraph by inserting a new paragraph, to read as follows:

"The Director will develop a procedure for the interstate coordination and exchange of information collected under the Small Operators Assistance Program."

On Page 241, by striking out subsection 17.4 in its entirety and substituting therefor the following: "17.4 Request for Assistance. Each applicant requesting assistance shall provide information on forms provided by the director in an application that shall be clear and concise and shall be provided in a format prescribed by the Director and/or a format required by the Federal Office of Surface Mining Reclamation and Enforcement."

On Page 249, subsection 17.7 (a) (4), after the words "twelve (12) month period" by striking the remainder of the sentence and inserting in lieu thereof the words "immediately following permit issuance."

On page 273, subsection 20.6 (a), after the word "first" by striking out the words "thirty (30)" and inserting in lieu thereof the word "fifteen".

On page 273, subsection 20.6 (c), after the words "date of the" by striking out the words "Assessment Officer receiving the finding specified in paragraph (a) of this subsection." and inserting in lieu thereof the words "issuance of a notice or order";

On page 274, subsection 20.6 (d), by striking out the first sentence, and inserting in lieu thereof the following: "The time and place of an informal assessment conference shall be posted at the Department of Environmental Protection Office nearest to the operation.

(u) The legislative rules filed in the state register on the twenty-seventh day of July, one thousand nine hundred ninety-five, authorized under the authority of section five, article twelve, chapter twenty-two, of this code, modified by the division of environmental protection to meet the objections of the legislative rule-making review committee and refiled in the state register on the seventeenth day of January, one thousand nine hundred ninety-six, relating to the division of environmental protection (monitoring well design standards, 47 CSR 60), are authorized.

NOTE: The purpose of this bill is to authorize the Division of Environmental Protection to promulgate legislative rules relating to monitoring well design standards.

Strike-throughs indicate language that would be stricken from the present law, and underscoring indicates new language that would be added.

KEN HECHLER
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(Plus all the volunteer help we can get)

FILED
JUL 3 10 50 AM '96
OFFICE OF WEST VIRGINIA SECRETARY OF STATE

TO: DAVE WATKINS

AGENCY: DEP-WASTE MGMT\WATER RES

FROM: JUDY COOPER, DIRECTOR, ADMINISTRATIVE LAW DIVISION

DATE: June 24, 1996

THE ATTACHED RULE FILED BY YOUR AGENCY HAS BEEN ENTERED INTO OUR COMPUTER SYSTEM. PLEASE REVIEW, PROOF AND RETURN IT WITH ANY CORRECTIONS. IF THERE ARE NO CORRECTIONS, PLEASE SIGN THIS MEMO AND RETURN IT TO THIS OFFICE. YOU WILL BE SENT A FINAL VERSION OF THE RULE FOR YOUR RECORDS.

PLEASE RETURN EITHER THE CORRECTED RULE OR THIS FORM WITHIN TEN (10) WORKING DAYS OF THE DATE YOU RECEIVED THIS REQUEST. CALL IF YOU HAVE ANY QUESTIONS.

SERIES: 60 TITLE: 47 DEP-WASTE MGMT\WATER RES

* THE ATTACHED RULE HAS BEEN REVIEWED AND IS CORRECT.

SIGNED: _____

TITLE OF PERSON SIGNING: _____

DATE: _____

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* THE ATTACHED RULE HAS BEEN REVIEWED AND NEEDS CORRECTING. THE CORRECTIONS HAVE BEEN MARKED.

SIGNED: Mark D. Priddy for DAVE WATKINS

TITLE OF PERSON SIGNING: GEOLOGIST II

DATE: 7/2/96

NOTE: IF YOU ARE NOT THE PERSON WHO HANDLES THIS RULE, PLEASE FORWARD TO THE CORRECT PERSON.