

**WEST VIRGINIA**  
**SECRETARY OF STATE**  
KEN HECHLER  
**ADMINISTRATIVE LAW DIVISION**

Form #3

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1992 SEP 18 PM 1:32  
OFFICE OF WEST VIRGINIA  
SECRETARY OF STATE

**NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE  
AND  
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE**

AGENCY: Department of Commerce, Labor & Environmental Resources - State Water Resources Board TITLE NUMBER: 46

CITE AUTHORITY WV Code § 20-5A-3(b)(2)

AMENDMENT TO AN EXISTING RULE: YES  NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 9

TITLE OF RULE BEING AMENDED: Underground Injection Control

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: \_\_\_\_\_

TITLE OF RULE BEING PROPOSED: \_\_\_\_\_

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

Frances E. Hunter

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Underground Injection Control

Type of Rule:  Legislative  Interpretive  Procedural

Agency: Department of Commerce, Labor and Environmental Resources, State Water Resources Board

Address: 1615 Washington Street, East, Charleston, West Virginia 25311

1. Effect of Proposed Rule	ANNUAL		FISCAL YEAR		
	Increase	Decrease	Current FY 93	Next	Thereafter
Estimated Total Cost	\$ 0	\$ 0	\$ 47,367	\$ 47,367	\$ 47,367
Personal Services			0	0	0
Current Expense			11,289	11,289	11,289
Repairs and Alterations			1,000	1,000	1,000
Equipment			1,250	1,250	1,250
Other			33,828	33,828	33,828

2. Explanation of Above Estimates: The current cost of implementing the State's Underground Injection Control program, regulated by the proposed rule Title 46 - Series 9, is supported by federal grant dollars awarded through the Safe drinking Water Act. The cost to the State in the federal fiscal year 1993 is \$47,367. These are 25% matching funds required to obtain \$145,500 of federal grant funds.

3. Objectives of These Rules: To permit the injection of waste disposal fluids into the subsurface in such a manner that does not cause a violation of any primary drinking water regulation or may otherwise adversely affect the health of persons. Also to inspect and enforce the provisions of these rules in regards to these injection practices.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government: The 25% matching funds have been relatively stable over the past couple of years. There is no indication that the Federal grant funding amounts will increase or decrease significantly in the years ahead. The economic impact to State government should remain relatively the same as previous years.

B. 1. Economic Impact on Political Subdivisions:

Same as Item 2.

2. Economic Impact on Specific Industries: It is nearly impossible to accurately estimate the impacts of the proposed rule due to the numerous site-specific conditions that may be encountered in the permitting and/or closure of the various types of injection wells.

3. Economic Impact on Specific Groups of Citizens:

Same as Item 2.

C. Economic Impact on Citizens/Public at Large:

Date: September 18, 1992

Signature of Agency Head or Authorized Representative

Frances E. Hunter

DATE: September 18, 1992  
TO: Legislative Rule-Making Review Committee  
FROM: Frances E. Hunter, Executive Secretary - State Water Resources Board

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SECRETARY OF STATE

LEGISLATIVE RULE TITLE: Underground Injection Control Rules

1. Authorizing statute(s) citation WV Code § 20-5A-3(b)(2)

2. a. Date filed in State Register with Notice of Hearing:  
June 8, 1992

b. What other notice, including advertising, did you give of the hearing?  
On July 22, 1992 filed another notice that was published in the State Register July 24, 1992; was published in Charleston Newspapers June 12 and July 3, 1992.

c. Date of hearing(s): August 3, 1992

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.  
Attached   x   No comments received           

e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing: (be exact)  
September 18, 1992

f. Name and phone number(s) of agency person(s) to contact for additional information:  
Frances E. Hunter - 558-4002  
Libby M. Chatfield - 558-4002

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

a. Give the date upon which you filed in the State Register a notice of the time and place of a hearing for the taking of evidence and a general description of the issues to be decided.

\_\_\_\_\_ N/A \_\_\_\_\_

b. Date of hearing: \_\_\_\_\_ N/A \_\_\_\_\_

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefor?

\_\_\_\_\_ N/A \_\_\_\_\_

d. Attach findings and determinations and reasons:

Attached \_\_\_\_\_ N/A \_\_\_\_\_

RECEIVED  
1992 SEP 18 PM 1:34  
OFFICE OF WEST VIRGINIA  
SECRETARY OF STATE

PROPOSED

Title 46 - Series 9

LEGISLATIVE RULES  
STATE WATER RESOURCES BOARD

UNDERGROUND INJECTION CONTROL

1987

1992

Department of Commerce, Labor and Environmental Resources  
STATE WATER RESOURCES BOARD  
1615 Washington Street, East  
Charleston, WV 25311-2126  
(304) 558-4002

Note: New language underscored, old language deleted.



# STATE WATER RESOURCES BOARD

~~K260 Greenbrier Street~~ 1615 Washington Street, East  
Charleston, WV 25311  
(304) ~~348-4002~~ 558-4002

July 22, 1992

RECEIVED  
JUL 22 PM 6:58

The Honorable Ken Hechler  
Secretary of State  
State Capitol Complex  
Charleston, West Virginia 25305

Re: Notice of hearings/meeting

Dear Mr. Secretary:

Pursuant to Chapter 6, Article 9A of the Code of West Virginia and in accordance with rules and regulations promulgated and filed by this Board in your office, notice is hereby given that the State Water Resources Board will meet on the following dates and locations with the agenda as listed below:

July 30, 1992 - State Capitol Complex Bldg. # 3 (Motor Vehicle) - Room 6

8:40 A.M. - Status report - Appeals Nos. 505, 506 & 507 - Island Creek Coal Company, Appellants vs. Director, Division of Natural Resources, Appellee and Buckhannon-Tygart River Coalition, Mountaineer Chapter of Trout, Unlimited, and the West Virginia Highlands Conservancy, Intervenor;

9:00 A.M. - Continuation of evidentiary hearing Appeal No. 494 - Braxton County Citizens for a Better Environment, et al., Appellants, vs. Division of Natural Resources, J. Edward Hamrick and G. Max Robertson, Waste Management Section, Appellees, and Central West Virginia Refuse Inc., Intervenor (see notice filed May 26, 1992);

August 3, 1992 - State Capitol Complex Conference Center - Bldg. # 7 Room C

7:00 P.M. Public hearing on Proposed Legislative Rules - Requirements Governing Groundwater Standards - Series 12; Proposed changes/amendments and corrections to Title 46 Legislative Rules - National Pollutant Discharge Elimination System (NPDES) Rules - Series 2; and proposed changes/amendments and corrections to Title 46 Legislative Rules Underground Control Rules, Series 9.

*"An independent Board dedicated to the protection of West Virginia waters and to the fair adjudication of environmental disputes"*

## BOARD MEMBERS

Charles R. Jenkins, Ph.D.  
Sarah Lee Neal  
David E. Samuel, Ph.D.  
Edward M. Snyder, Ph.D.  
Donald C. Tarter, Ph.D.

## STAFF

Executive Secretary Frances E. Hunter  
Libby M. Chatfield  
Technical Advisor ~~xxxxxx~~  
Legal Advisor ~~xxxxxx~~

The Honorable Ken Hechler  
July 22, 1992  
page 2

August 4, 1992 - State Capitol Complex Conference Center - Bldg. # 7 Room B

9:00 A.M. - Status report - Appeal No. 503 - Columbia Gas Transmission Corporation, Appellant v. Chief, Water Resources Section, Appellee;

- Evidentiary hearing - Appeal No. 492 - Associated Tire Distributors, Inc., Appellant vs. J. Edward Hamrick, Director of the West Virginia Division of Natural Resources, Appellee;

- Other business that may properly come before the Board. The above hearings/meetings are open to the public and the meeting rooms have a seating capacity of 30 persons.

Sincerely yours,



Frances E. Hunter  
Executive Secretary

## RATIONALE

### Underground Injection Control Program

Legislative rules for the Underground Injection Control ("UIC") Program (46 CSR 9) were first promulgated in 1983 and were amended in 1987. Unfortunately, a number of minor omissions and typographical errors were inadvertently included in the amended rule as it was published in 1987. All of the amendments included herein are corrections of those drafting errors; none will alter the substance of the rule as amended in 1987.

The following is a summary of responses directed to the proposed amendments which were received by the Board during the public comment period which closed August 7, 1992.

#### Comment

One commentor suggests that the Water Resources Board adopt the existing federal Underground Injection Control Program by reference.

#### Board Response

The State of West Virginia applied for and received primacy for the UIC program on December 5, 1983. The primacy criteria are based upon the State of West Virginia developing regulations that are as stringent as the Federal UIC regulations. The Water Resources Board promulgated Legislative Rule Title 46, Series 9 for this purpose. This rule was presented to EPA as a condition of primacy. The Environmental Protection Agency reviewed this rule and decided that it met the minimum criteria necessary for the State to implement an Underground Injection Control program with a minimum of federal

oversight. Therefore, it is the position of the Board that Title 46, Series 9 meets the federal adequacy criteria for a State implemented UIC program and no further incorporation into the rule is necessary at this time.

Comment

One comment received implied that the majority of existing UIC wells are oil and natural gas related Class II wells. The commentor also implied that these wells and Class III solution mining wells, are currently regulated by federal rules incorporated by reference.

Board Response

The majority of UIC wells in the State of West Virginia are Class V wells, which currently outnumber Class II wells by a margin of three to one. The Class II and III wells are also regulated by the same rules that regulate Class V wells - Title 46, Series 9. The primacy package as eluded to in the above response also included all classes of UIC wells, which consists of Class I, II, III, IV, and V's.

Comment

The use of Roman and/or Arabic numbers used for the classes of wells was brought to the Board's attention.

Board Response

The Board changed the numbers from Arabic to Roman throughout the text of the rule to be consistent with the federal rule.

Comment

One commentor suggested that to incorporate the federal

standards by reference would avoid "reinventing the wheel" and result in less confusion and more efficient administration than if an entire new series is enacted.

Board Response

The Water Resources Board would like to point out that Title 46, Series 9 has been in existence since 1983 and that the only reason for amending the rule at this time is to correct some minor typographical errors and omissions created during a reformatting of the rule in 1987. The substance of the rule has not changed and the State of West Virginia has been cited by EPA as an exemplary State in Region III for their implementation of the UIC program.

Comment

One commentor indicated that many differences appear in the proposed regulations when compared to the federal regulations that may cause problems unless corrected or amended.

Board Response

The Water Resources Board would like to point out once again that the State of West Virginia received primacy from the federal government to implement the UIC program only after a long exhaustive process where Title 46, Series 9 was compared to the federal UIC requirements and found by the EPA to be quite adequate.

Comment

One commentor recommended that if the federal standards are not incorporated by reference that an extensive and thorough review and rework of the proposed regulation be undertaken.

Board Response

The Water Resources Board would like to point out again, the purpose for promulgation of this rule at this time is to correct typographical errors and omissions inadvertently incurred when the regulation was reformatted back in 1987. In lieu of the fact that the State has been cited as exemplary in its implementation of the UIC program, the Board feels that to interfere with a regulation that has the approval of the federal government would be an imprudent use of the State's time and resources.

Board Action

The Board adopts the proposed rule.

AFFIDAVIT OF PUBLICATION

STATE OF WEST VIRGINIA,

KANAWHA COUNTY, TO-WIT:

I, Debra Caldwell OF

THE CHARLESTON GAZETTE, A DAILY DEMOCRATIC NEWSPAPER,

THE DAILY MAIL, A DAILY REPUBLICAN NEWSPAPER,

PUBLISHED IN THE CITY OF CHARLESTON, KANAWHA COUNTY,

WEST VIRGINIA, DO SOLEMNLY SWEAR THAT THE ANNEXED

NOTICE OF: AMENDMENTS TO TIT. 46

WAS DULY PUBLISHED IN SAID PAPER(S) ON THE DATES

LISTED BELOW, AND WAS POSTED AT THE FRONT DOOR OF THE

COURT HOUSE OF SAID KANAWHA COUNTY, WEST VIRGINIA,

ON THE

4TH DAY OF JULY , 1992 .

DATES PUBLISHED:

07/03/92 GAZETTE 07/03/92 DAILY MAIL

SUBSCRIBED AND SWORN TO BEFORE ME THIS

6TH DAY OF JULY , 1992 .

Frances A. Hartman

NOTARY PUBLIC OF KANAWHA COUNTY, WEST VIRGINIA

PRINTERS FEE \$ 43.80

**NOTICE OF CHANGE IN PUBLIC HEARING DATE**

The public hearing before the State Water Resources Board scheduled for 7:00 p.m. in Conference Room C located at the State Capitol Complex Bldg. 7 has been changed from July 23, 1992 to August 3, 1992 - same time. The subject of the public hearing in accordance with applicable State and Federal requirements is as follows:

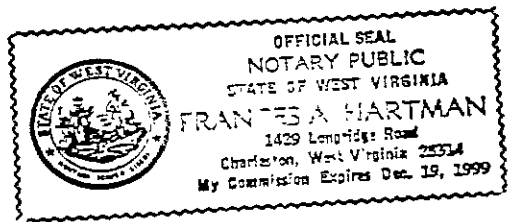
Proposed changes/amendments and corrections to Title 46 Legislative Rules - National Pollutant Discharge Elimination System (NPDES) rules - Series 2; and

Proposed Title 46 Legislative Rules - Requirements Governing Groundwater Standards - Series 12.

People wishing to make comments on the proposed rules are invited to be present or represented at the hearing. Although oral statements will be accepted, written statements are encouraged for the accuracy of the record. Comments will be received until August 7, 1992.

Copies of the proposed rules may be obtained by contacting the Board Office at 1615 Washington Street, East Charleston, WV 25311 (304) 558-4002.

(92217)



STATE OF WEST VIRGINIA,

KANAWHA COUNTY, TO-WIT:

I, Debra L. Watson OF

THE CHARLESTON GAZETTE, A DAILY DEMOCRATIC NEWSPAPER

THE DAILY MAIL, A DAILY REPUBLICAN NEWSPAPER,

PUBLISHED IN THE CITY OF CHARLESTON, KANAWHA COUNTY,

WEST VIRGINIA, DO SOLEMNLY SWEAR THAT THE ANNEXED

NOTICE OF PUBLIC HEARING

WAS DULY PUBLISHED IN SAID PAPER(S) ON THE DATES

LISTED BELOW, AND WAS POSTED AT THE FRONT DOOR OF TH

COURT HOUSE OF SAID KANAWHA COUNTY, WEST VIRGINIA,

ON THE

13TH DAY OF JUNE , 1992 .

DATES PUBLISHED:

06/12/92 GAZETTE 06/12/92 DAILY MAIL

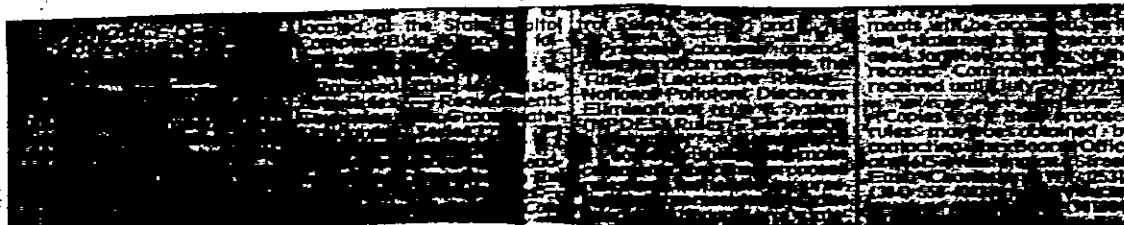
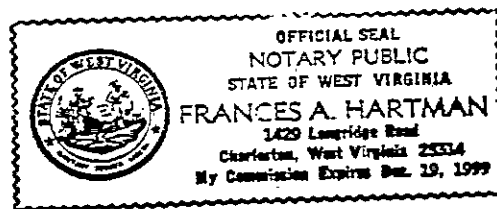
SUBSCRIBED AND SWORN TO BEFORE ME THIS

15TH DAY OF JUNE , 1992 .

Francis A. Hartman

NOTARY PUBLIC OF KANAWHA COUNTY, WEST VIRGINIA

PRINTERS FEE \$ 43.80





State of West Virginia  
DIVISION OF ENVIRONMENTAL PROTECTION

10 McJunkin Road  
Nitro, WV 25143-2506

Gaston Caperton  
Governor

David C. Callaghan  
Director

August 3, 1992

Frances E. Hunter - Executive Secretary  
State Water Resources Board  
1615 Washington Street, East  
Charleston, WV 25311

RECEIVED

AUG 06 1992

WATER RESOURCES BOARD

Dear Ms. Hunter:

Re: Comments to proposed rule 46 CSR 9 "Underground Injection Control".

I have reviewed the proposed regulations titled, "Underground Injection Control" and have the following editing comments.

On page 25, regulation 46-9-9.1.a. due to changes in the Oil and Gas law, should read as follows:

The criteria and standards applicable to Class #2 wells shall be those which are required pursuant to Chapter ~~22-4-122-8-1~~ et seq. and Chapter ~~22-4A-122B-1-1~~ et seq. and the regulations thereunder, and any other requirements that the Chief considers reasonably necessary to ensure that no pollution of USDW's occurs.

I thank you for the opportunity to comment and if you have any questions please feel free to contact me at 759-0514.

Sincerely,

Theodore M. Streit  
Chief - Office of Oil and Gas

Comments by Bob Foster  
Proposed Underground Injection Control Program  
Water Resources Board

My name is Bob Foster, and I represent the West Virginia Manufacturers Association. The primary comment that I have regarding an Underground Injection Control program for West Virginia is that I would encourage the Water Resources Board to adopt the existing federal Underground Injection Control program by reference. The majority of existing UIC wells are oil and natural gas related Class II wells, and are currently regulated by federal rules incorporated by reference. These rules were incorporated by the former Department of Energy. Solution mining wells, Class III wells, are also regulated under the same program.

Incorporating the federal standards by reference will avoid "reinventing the wheel" and result in less confusion and more efficient administration than if an entire new series is enacted. If the Water Resources Board thinks that stricter standards are required in certain instances, it is quite easy to modify the document incorporated by reference to reflect more stringent requirements. Also, incorporation by reference assures the state that the minimum federal requirements are met.

During the WVMA review of the proposed regulations, counsel for the WVMA noticed that many differences appear in the proposed regulations when compared to the federal UIC regulation that may cause problems unless corrected or amended. Many are inconsequential, but some differences are substantive errors and will result in unneeded litigation or confusion if adopted.

In the event that the Water Resources Board does not incorporate the federal standards by reference, then the West Virginia Manufacturers Association recommends an extensive and thorough review and rework of the proposed regulations. Some areas which need to be addressed and corrected are noted in our comments. Our comments are not to be taken to be an exhaustive list of changes, but merely representative of the kind of items which should be noted in the event the Water Resources Board chooses not to incorporate the federal standards by reference.

Thank you very much, I appreciate the opportunity to offer comments.

JHJ:eid

**COMMENTS REGARDING  
PROPOSED AMENDMENT OF REGULATIONS,  
UNDERGROUND INJECTION CONTROL,  
46 C.S.R. SERIES 9**

**Submitted On Behalf Of -  
The West Virginia Manufacturers Association**

**Prepared By:**

**Robinson & McElwee  
600 United Center  
Post Office Box 1791  
Charleston, West Virginia 25326  
(304) 344-5800**

**Counsel for  
West Virginia Manufacturers Association**

**RECEIVED**

**AUG 07 1992**

**WATER RESOURCES BOARD**

**COMMENTS REGARDING  
PROPOSED AMENDMENT OF REGULATIONS,  
UNDERGROUND INJECTION CONTROL,  
46 C.S.R. SERIES 9**

**I. INTRODUCTION**

On June 8, 1992, the West Virginia Water Resources Board ("The Board") filed with the Secretary of State a rule amending, 46 C.S.R. Series 9, governing underground injection control ("UIC") in West Virginia. Accompanying the proposed rule was a notice requesting both written and oral comments. Pursuant to this notice, (the West Virginia Manufacturer's Association "WVMA") has undertaken a review of the proposed rule, and files these comments.

The WVMA represents a broad cross-section of large and small industrial concerns throughout West Virginia. The WVMA offers these comments as a means to facilitate development of a reasonable and protective UIC program.

**II. COMMENTS**

**A. Incorporation by Reference of the Federal Regulations**

The majority of the UIC wells in the State are Class II (oil and gas) wells, and are currently regulated by the Office of Oil and Gas pursuant to regulations found at Title 38 Series 15 (Underground Injection Control). Solution mining wells, Class III, are also administered by the same rule and by the same program director. That rule, for the most part, incorporates by reference the federal standards found in 40 C.F.R. Parts 144, 146 and 124, with

changes for the program - specific differences that apply in West Virginia (e.g., changes in the references to the program authority). This incorporation by reference has worked well for the Office of Oil and Gas, which oversees a large number of wells.

The WVMA believes that incorporation of the federal UIC regulation by reference would be appropriate for this portion of the State UIC program as well. Incorporation by reference of the federal standards assures the adoption of a program which meets the required federal minimum standards, while allowing the State to avoid the many errors that occurred in copying the federal regulations, and would allow owners and operators of UIC wells to act consistent with their knowledge and understanding of the federal regulations. Any additional requirements that are necessary to strengthen the federal program could still be added to the State rule that incorporates the federal program by reference.

**B. Comments on Proposed Rule**

If the Board does not wish to incorporate the federal program by reference, then the WVMA offers the following comments. While not intended as an all-inclusive review of the proposed regulations, the following comments are intended to be representative of the types of items which require close scrutiny and consideration by the Board prior to final approval this set of regulations.

**C. Overview**

**a. Typographical Errors, Omissions, Other Format Considerations**

Errors and changes from the federal rules appear throughout the document. Some are insignificant and merely minor misspellings. Others, such as the "area of review" formula, section 46-9-5.3.b., contain substantial errors that significantly alter the intended

meaning. In other sections, minor word changes may or may not be errors, but they are certainly significant. Section 46-9-2.5, defining "aquifer," is a case in point.

Unexplained omissions and additions occur in certain instances. Section 46-9-2.50 omits the word "area" after "water" in the definition of "site." "Site" in 40 CFR §146.3 means "the land or water area where any facility or activity is physically located or conducted . . . ." Section 46-9-2.64 defines "wetlands" but the term is not defined in the federal regulations. The WVMA is unsure as to how these changes are intended to affect the interpretation of the rule.

As a formatting note, the State regulations inconsistently classify wells using both Arabic and Roman numerals, whereas the federal rules use only Roman numerals. In addition, use of punctuation marks is inconsistent throughout.

**b. Definitions - Section 46-9-2.**

The State version contains several definitions that are not contained in the federal version and some definitions that vary from the federal version. For example, Section 46-9-2.2., which contains the term "Acidizing," does not appear in the federal rules. The federal regulations contain a number of definitions not contained the State regulations, such as "cone of influence," "injection interval," "new well," and "transmissive fault or fracture."

Several State-specific terms such as "Director" are defined. These State-specific terms should be modified to conform to the Division of Environmental Protection titles. For instance, section 46-9-2.3 defines "Director" to mean the "Director of the Oil and Gas Section of the Department of Energy." That title is no longer valid. The title now is "Chief of the Office of Oil and Gas."

c. Substantive Differences

Section 46-9-5, "area of review," contains typographical errors that create substantive differences from federal requirements. The formula used to calculate the area of review is incorrect, and the "area of review" specified in the State regulations does not allow any input from other persons when determining the extent of the area of review. The State official determines the extent of the area of review, whereas in the federal regulation (40 CFR §146.6) additional input from others is allowed.

Siting of Class I wells appears to be handled differently under the State rule. Section 46-9-8.2.a. allows for siting in a similar manner to the federal version but with the additional condition that the site have "an overlying confining bed that is free of known faults or fractures within the area of review," while the federal version of that provision (40 CFR §146.12(a)) allows for demonstration of geologic stability.

Injection of corrosive fluids appears to be handled differently under the State program than the federal program. Section 46-9-8.2.d. is less specific and could be construed more restrictively than its federal counterpart, 40 C.F.R. §146.65(b), which allows design in accordance with API and ASTM standards.

D. Comments Directed to Specific Sections

46-9-2. - Definitions

Section 2.3. - Director

"Director" has been substituted for "administrator" in the State rule, but is still incorrect, because the title is now "Chief of the Office of Oil and Gas," and not "Director of the Oil and Gas Section of the Department of Energy."

### Section 2.5. - Aquifer

"Aquifer" is defined in the federal rules in part, as a "formation that is capable of yielding a significant amount of water to a well or spring." 40 CFR §§144.3, 146.3 (emphasis added). The State definition, by way of contrast, refers to a "formation which is capable of yielding a usable amount of water to a well or spring" (emphasis added).

### Section 2.6

This section contains a typographical error - "o he," should be "to the."

### Section 2.7.

"Authorized representatives of the Chief" should be modified to reflect the new Division of Environmental Protection titles.

### Section 2.21. - Existing Injection Well

"Existing" is misspelled.

### Section 2.23. - Facility or Activity

This section appears to be more limited than its federal counterpart, 40 CFR §144.3. The State definition only includes "injection wells," whereas the federal definition includes "a [sic] other facility or activity."

### 2.48. - Safe Drinking Water Act

A typographical error appears in listing "95-1900" rather than "95-190."

### 2.50. - Site

The word "area" appears to be omitted from the State rules.

#### 46-9-4. - Classes of Wells

The classes are specified with Arabic numerals 1, 2, 3, 4, 5 in the section headings, yet Roman numerals are still used to refer to those wells throughout various other parts of the State regulations. The federal rules use Roman numerals throughout.

#### 46-9-5.3.b. - Area Project vs. Project Area

The Theis equation needs to be modified in the State regulation. The equation itself and the underlying mathematical factors used in the two equations specified in the State regulation are incorrect. The equation for the radius is not taken to the 1/2 power. The "X" factor which is used in the calculation of radius is not included in the radius equation "r." In addition, the factor "pi" (3.14) is not included in the "X" calculation. The small "h" appears as the same factor in the State equation, whereas in the federal regulation there are essentially two separate "h" factors. The federal counterpart appears at 40 CFR §146.6.

#### Section 46-9-8.2.c

Subsection 8.2.c. does not appear to be copied properly. The phrase "shall inject fluids through tubing and packer set immediately above the injection zone," differs from the federal regulations (40 CFR §146.12(c)), which reads "shall inject fluids through tubing with a packer set immediately above the injection zone." The federal regulations contain another clause allowing the use of an approved fluid seal as an alternative. The possibility of using a fluid seal is not included in the State regulation.

#### Section 46-9-8.2.d

The State regulations require all parts of Class I wells which will come in contact with corrosive fluids to be constructed of corrosion-resistant materials. The federal regulations

mandate "compatibility" and reference industry standards such as the API or ASTM standards or standards acceptable to the Director. 40 CFR §146.65(b).

**46-9-7 - Requirements for Wells Injecting Hazardous Waste**

Section 46-9-7.4.a. specifically prohibits siting a well injecting hazardous waste in a "Seismic Risk Zone 2." The federal regulations in 40 CFR §146.62 allow for demonstration that a well may be able to be located within a fault zone.

**III. RECOMMENDATIONS AND CONCLUSIONS**

West Virginia currently regulates the majority of Underground Injection Control facilities by incorporating the federal rules by reference. Without attempting an exhaustive comparison of the federal regulations and the proposed State rule, the previous comments are intended to represent some of the differences between the proposed State and the federal UIC program that are readily identifiable. The incorporation by reference of a program to regulate the remaining UIC facilities would be an efficient, cost effective, means of establishing the minimum program requirements.

The WVMA expresses its appreciation to the Water Resources Board for this opportunity to offer our input on the proposed revisions to Series 9 of the Board's regulations. If you wish, we would welcome the opportunity to discuss these comments at your convenience.

Respectfully submitted this 3rd day of August, 1992.

WEST VIRGINIA MANUFACTURERS ASSOCIATION