WEST VIRGINIA
SECRETARY OF STATE
NATALIE E. TENNANT
ADMINISTRATIVE LAW DIVISION

Form #3

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SECRETARY OF STATE
STATE CAPITOL

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

AGENCY: DEP - Office of Oil and Gas TITLE NUMBER: 35

CITE AUTHORITY: W. Va. Code § 22-6-2

AMENDMENT TO AN EXISTING RULE: YES X NO ____

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 4

TITLE OF RULE BEING AMENDED: Oil and Gas Wells and Other Wells

IF NO, SERIES NUMBER OF 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.

Randy C. Huffman/KB

Authorized Signature

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period; Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: July 30, 2009

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM:(*Agency Name, Address & Phone No.*) WV Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE Charleston, WV 25304

(304) 926-0450

LEGISLATIVE RULE TITLE: Oil and Gas Wells and Other Wells

1. Authorizing statute(s) citation W.Va. Code §22-6-2

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:

June 11, 2009

b. What other notice, including advertising, did you give of the hearing?

Class I legal ad in Charleston Gazette and Daily Mail, Agency mailing list, Agency website, Agency newsletter

c. Date of Public Hearing(s) ***or*** Public Comment Period ended:

July 14, 2009

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)

July 31, 2009

f. **Name, title, address and phone/fax/e-mail numbers** of agency person(s) to receive all *written correspondence* regarding this rule: (Please type)

James Martin, Chief

WV DEP - Office of Oil and Gas 601 57th Street SE, Charleston, WV 25304

phone: (304) 926-0499 ext. 1654 fax: (304) 926-0452

email: James.A.Martin@wv.gov

g. **IF DIFFERENT FROM ITEM 'f'**, please give **Name, title, address and phone number(s)** of agency person(s) who wrote and/or has responsibility for the contents of this rule: (Please type)

same as above

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 or comment period:

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

Sign In Sheet

Public Hearing

For Proposed Rule Changes to 35CSR3 – Oil and Gas and Other Wells

Tuesday, July 14, 2009, 6:30 p.m.

Name (please print)	Address	Organization	Phone/Fax	E-mail	Comment Yes/No
George Monk	194 Buffalo Lane Poca, WV 25159		304-993-8491	gmonk@citynet.net	yes ✓
Holly Schaffnit	"		"	"	no
Don Garvin	PO Box 666 Buckhannon, WV 26201	WVEC	304-395-0078	DSGJr.	Yes
Sally Snyder	921 Little Pigeon Rd. Pigeon, WV 25164	None	304-565-3065		No
Chloe Snyder	" "	"	" "		No
John Snyder	921 Little Pigeon Rd. Pigeon, WV. 25164	NONE	304-55-3065	snyder.jc@gmail.com	
Victoria Dugan	1710 Penn Ave Chas. WV 25304	EQT	304-348-3845	vdugan@eqt.com	
Joseph C. Pettey	P.O. Box 437 Hamlin WV 25523	IOGA	304-545-4428		NO
David McMahon	1624 Kenwood Charleston, WV 25314	WVSORO	415-4748	wvdavid@WVdaved.net	NO
Charles Bland	405 Capitol St Charleston	IOGA-WV	304-344-9867	cbland@ioga-wv.com	Yes ✓ W
Roger Heldman	PO Box 5579 Vienna WV 26105	East Resources	304 480 2243 304 480 -2239	rheldman@eastresourcesinc.com	
Eleanor Spohn	1624 Kenwood Rd Charleston WV	WV Soro	304-344-3613	2hspohr@mountain.net	NO

Sign In Sheet

Public Hearing

For Proposed Rule Changes to 35CSR3 – Oil and Gas and Other Wells

Tuesday, July 14, 2009, 6:30 p.m.

Name (please print)	Address	Organization	Phone/Fax	E-mail	Comment Yes/No
Nathaniel Mordin	550 Eagan St Charleston, WV	EQT	304 348 5813	nmanchin@eqt.com	No
FRED A. DECKER	P.O. Box 13423 CHAR. WV 25360	J.W.P.T.	304 984 1946 304 984 2289	fdecker@jwpt.us	
Steven Green		Jackson Kelly PLLC	304-340-1312	SGreen@JacksonKellylaw.com	NO
Joe Gollehon	300 Summers St. Charleston, WV	Charles Ryan Associates	304-342-0161 304 342-1941	jgollehon@charlesryan.com	NO
Bette Little	HC 69 Box 281 Hillsboro, 24946	WV Sierra Club	304-653-4277	blittle@citynet.net	Yes ✓
JULIE ARCHER	1500 DIXIE ST. CHARLESTON, WV 25311	WV SORO WV CAG	304-346-5891	julie@wvcag.org	no
MATT NOERREL	P O Box 6 ROCK CREEK, WV 25179	CRMW	304 854 2182	matt@crmw.ACT	YES ✓
BOB ORNDORFF	445 W MAIN ST CLARKSBURG WV	DOMINION RESOURCES	304 627-3146	ROBERT.C.ORNDORFF@DOM.COM	NO
Dave Yaussy	PO Box 1791 Charleston WV 25326	Robinson & McElwee	304 347-8358	dly@ramlaw.com	No
Andrew McCallister	PO Box 273 Charleston 25321-0273	Spilman Thomas & Battle	304-340-3858	amccallister@spilmanlaw.com	No
Corky DeMarco	PO Box 3231 Charleston 25332	WVONGA	304 3431609	DEMARCO@WVONGA.COM	"
Sam Minardi	2016 B Kanawha Blvd, Charleston, WV 25311	E. Minardi Public Affairs	304. 205. 7442	Sam.minardi@minardipublicaffairs.com	NO

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:45 PM
To: Martin, James A
Subject: FW: DEP Rule 35-CSR-4

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Robert Gronan [mailto:robgronan@yahoo.com]
Sent: Monday, July 13, 2009 11:24 AM
To: DEP Comments
Subject: DEP Rule 35-CSR-4

Please enter into the record these comments regarding DEP Rule 35-CSR-4 for oil and gas regulation. I support the new rules proposed. In addition:

- I applaud your proposal under Section 16.4.d to require a synthetic liner. However, this should be in addition to clay or other impervious soil liner and not be allowed to be the only barrier placed over porous soil.

- Reclamation of all pits and impoundments should include removal of all wastes including liners to off-site approved waste disposal facilities.

- DEP should require notice be given to surface owners down gradient prior to construction of all pits and impoundments.

DEP should require disclosure of all chemicals proposed to be added to water used to fracture a well. Known carcinogens, such as benzene, should be prohibited.

Analysis of well and spring water on lessor's and adjacent properties should be required before and after drilling. This should include salts and all chemicals added to the injection water for fracing.

Thank you for your consideration of these points.

Sincerely yours,
Robert J. Gronan, DO, PhD
HC 40 Box 40
Lewisburg, WV 24901
304-645-4318

Roger Heldman
General Manager, WV E&P Operations

EAST RESOURCES INC.

7/14/09

WV DEP- Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304
Attn: James Martin

RE: Proposed Rule changes to WV Code §22-6-2

Dear Mr. Martin,

East Resources Engineering and Environmental Staff has reviewed the above captioned proposed rule changes. It is our opinion that Chapter 35-4-21 Construction of Pits and Impoundments with capacity of Greater than Five Thousand (5000) Barrels, Subchapters 21.2a, 21.2c and subchapter 21.6a are unnecessary as an element of the design and construction requirements for impoundments ranging in size from greater than 5,000 barrels (210,000 gallons) to less than 116,376 barrels (15 acre feet). The requirements of subchapters 21.2a and 21.2c and 21.6a are appropriate requirements for impoundments of the sized described in subchapter 21.4 and 21.5.

The remaining elements of subchapter 21.2 (subchapters 21.2b and 21.3) could be utilized to develop a standardized set of construction standards for impoundments greater than 5,000 barrels and smaller than impoundments described in subchapter 21.4 that could be utilized by West Virginia operators that would not require a design by a West Virginia registered Professional Engineer.

It is further our opinion that the other requirements (two feet of freeboard, stable foundation, and regular inspections of the pit) are more than adequate to properly construct and monitor these larger volume pits, since these pits are temporary structures that will be reclaimed once the well drilling and completion process is complete.

Very truly yours,

Roger Heldman

P.O. Box 5519 • Vienna, West Virginia 26105-5519 • (304)422-6565 • FAX: (304)480-2239

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:46 PM
To: Martin, James A
Subject: FW: changes to 35-CSR-4

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Hedda Haning [mailto:haning2@verizon.net]
Sent: Monday, July 13, 2009 2:24 PM
To: DEP Comments
Subject: changes to 35-CSR-4

Thank you for this opportunity to comment on DEP Rule 35-CSR-4. I am an ordinary citizen of WV particularly concerned about our water resources.

I feel the rule should require complete public information on what goes into the ground for drilling and fracking; as well as what is drawn out of the ground including saline solutions and radiation contamination--including from natural sources. The rules should also give the DEP the right and capability of monitoring and regulating both.

We already have far too much contamination of our waters. Just bear in mind that, not gas or coal, but water is WV most valuable natural resource.

Thank you,
Hedda L. Haning
1031 Forest Rd
Charleston, WV 25314
304-344-0472

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:48 PM
To: Martin, James A
Subject: FW: {Fraud?} 35-CSR-4 Oil & Gas Well Regulations

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: jlfittro@aol.com [mailto:jlfittro@aol.com]
Sent: Tuesday, July 14, 2009 11:00 AM
To: DEP Comments
Subject: {Fraud?} 35-CSR-4 Oil & Gas Well Regulations

I have one comment to make with respect to the limitations on pit location.
DEP should have siting requirements for pits to prevent contamination of freshwater and to protect human, aquatic and animal health. Pits should be restricted in karst and alluvium areas- most of our creeks and river valleys.

Thank you,

Jeri Hunt
Charleston, WV

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:49 PM
To: Martin, James A
Subject: FW: 35-CSR-4 comment

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: George Garton [mailto:georgegarton@mail.wvdsl.net]
Sent: Tuesday, July 14, 2009 2:48 PM
To: DEP Comments
Subject: 35-CSR-4 comment

7-14-09

I encourage you to adopt the proposed changes to 35-CSR-4 which help to ensure the people of WV are not victimized by inadequate regulations in this day and age of mineral exploration.

George Garton

1072 Elk City Rd

Jane Lew, WV 26378

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:48 PM
To: Martin, James A
Subject: FW: DEP Rule 35-CSR-4 (Regulating Oil & Gas Wells)

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Ginger Must [mailto:gingerm@mail.mln.lib.wv.us]
Sent: Tuesday, July 14, 2009 10:10 AM
To: DEP Comments
Cc: Beth Little
Subject: DEP Rule 35-CSR-4 (Regulating Oil & Gas Wells)

Dear DEP,

This is to give my strong support for heightened regulation of oil & gas drilling in West Virginia.

West Virginia is rich in natural resources, yet often finds itself in the bottom ratings for quality of life, education, environment and health. Is this not due in some measure - historically - to our not being careful enough regarding how our resources are extracted?

- The West Virginia DEP is to be commended for proposing all pits & impoundments have synthetic liners to prevent seepage, as well as that they be inspected every three days during the structure's life. To many folks seeking profits, financial gain includes, unfortunately, cutting corners wherever humanly possible. Without these inspections, we can kiss our state's water quality goodbye (and add it to the bottom rankings as well)! Thank you for supporting this - as well as putting in the requirement that registered engineers design and certify plans and inspect pits & impoundments before use.

- I support full disclosure of the chemicals, levels of salt and naturally occurring radioactive materials involved in fracturing wells, including testing and disclosure of flow-back contents. Any attempt by the industry to claim "trade secrets" should be laughed at, as we would at a food company claiming it doesn't have to list ingredients. It doesn't take a rocket scientist to understand that water is a consumable as much as food!

- In additions to current parameters, I'd like to see requirements that all water samples be analyzed for major ions and that sodium concentrations be measured in all water samples, and reported to the landowners.

Thanks for what you are trying to do.

Ginger Must
P.O. Box 39
Hillsboro WV 24946

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:47 PM
To: Martin, James A
Subject: FW: Comments on changes to DEP Rule 35-CSR-4

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Lonnie Ward [mailto:misha8grey@yahoo.com]
Sent: Monday, July 13, 2009 4:41 PM
To: DEP Comments
Subject: Comments on changes to DEP Rule 35-CSR-4

"The purpose of life is not to be happy. It is to be useful, to be honorable, to be compassionate, to have it make some difference that you have lived and lived well." --Ralph Waldo Emerson

"RAISE MORE HELL"-Molly Ivins

Since the expansion of drilling in the Marcellus Shale formations in so many parts of WV,even where such drilling and the attendant hydraulic fracturing of the substrate has the potential to contaminate not only the drinking water wells of nearby residents,but the surface watersheds which provide drinking water for towns and cities downstream,it is even more important that the Rule provide for the isolation of all waste water,pit liners and equipment to be disposed of in an approved manner off-site from the pits.

To reduce the possibility of ionic contamination of soil or water, ALL water going INTO and FROM these wells must be contained and disposed of at the facility approved for the pit liners and equipment.

It will be even more important to sample the drinking water wells and sources of municipal water supplies,BEFORE,DURING,and at the CONCLUSION of hydraulic fracturing,to determine the quality of the water at all 3 of those time periods,as there is precident in State Law that any Corporation of the State of WV who destroys or degrades the water supply of a citizen or a community MUST replace it.

Lonnie Ward
304 536 1864

Comments of the

WEST VIRGINIA OIL AND NATURAL GAS ASSOCIATION

35 C.S.R. 4

OIL AND GAS WELLS AND OTHER WELLS

I. Introduction.

WVONGA, chartered in 1915, is one of the oldest trade associations in the state and serves the entire oil and gas industry. WVONGA members are engaged in exploration, production, transmission, storage, sales and distribution. Allied members serve the industry through drilling, pipeline construction, well service and oil field service and supply. The association regularly comments on issues of interest to its members, and offers the West Virginia Department of Environmental Protection ("DEP") the following comments with regard to 35 C.S.R. 4 (referred to herein as "the Rule").

II. Comments

A. Standards for Construction and Reclamation of Wastewater Pits and Fresh Water Impoundments – Section 16

WVONGA believes that Section 16.4, the site reclamation portion of the Rule, is the wrong place to establish requirements for construction of pits and impoundments. This is particularly true in light of Section 21, which pertains to the construction of pits and impoundments of more than 5,000 barrels. We suggest that there be a section on reclamation of pits and impoundments in Section 16, and a separate section on construction of pits and impoundments at Section 21.

Regardless of where the construction and reclamation requirements are found, WVONVGA has the following concerns:

1. Different standards should apply to construction and reclamation of wastewater pits and fresh water impoundments. Wastewater pits are managed so that they present no danger from failure of the pit or release of pollutants. Fresh water impoundments, on the other hand, are regulated only to eliminate danger caused by failure of the containing dike or dam. Since, by their very definition, impoundments do not contain pollutants, there is no

need to eliminate "seepage, leakage or overflows" (Section 16.4.a) except to the extent that the integrity of the containing structure may be compromised.

2. Section 16.4.c. requires adequate freeboard in pits and impoundments of not less than two feet. We believe that the requirement of adequate freeboard is reasonable, but specifying two feet may be excessive in some circumstances. For example, requiring two feet of freeboard for a pit that is only six feet deep is overly protective. Furthermore, the freeboard is intended to prevent overtopping of pits, which would cause the release of pollutants. Overtopping of an impoundment, to the extent that no structural danger is posed, presents no environmental concern.

   We would also note that the Rule specifies that the owner is to notify the inspector when the operator "is unable to maintain adequate freeboard to prevent overflow. . . ." Section 16.4.c. It is not clear from this whether the report is required when the freeboard is less than two feet, or when there is a danger of overtopping.

3. Synthetic liners will now be required for impoundments as well as pits, pursuant to Section 16.4.d. A synthetic liner should not be required for impoundments, as the seepage or leakage of fresh water does not pose an environmental danger. Liners should only be required in impoundments to the extent that they are necessary from a structural standpoint.

4. We do not support adding the reference to impoundments in Section 16.4.g. While the reclamation of pits could result in the release of pollutants, the reclamation of impoundments should not. Other than the potential release of sediment during reclamation operations, nothing associated with reclamation of an impoundment should result in discharge of pollutants to waters of the state. We request clarification that reclamation of impoundments using standard storm water pollution prevention methods is what is expected by the DEP by this section.

5. In Section 16.4.h the DEP is suggesting, by its reference to the reclamation period imposed by *West Virginia Code* §22-6-30, that there is a limit to how long fresh water impoundments may be maintained. The statutory reclamation requirement applies to "pits for containing muds, cuttings, salt water and oil that are not needed for production purposes. . ." which are to be reclaimed, generally within six months after a well is drilled. Impoundments, particularly those that are large and may be used for multiple

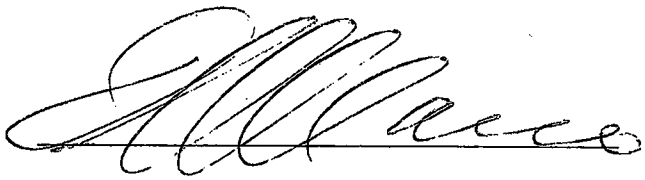
wells, may still be needed beyond that time. Leaving them in place for longer periods does not pose an environmental hazard, and we note that Section 21.5 allows impoundments to be left permanently, which is inconsistent with Section 16.4.h. Therefore, we suggest the word "impoundments" not be added to Section 16.4.h.

B. Pits and Impoundments Greater than Five-Thousand Barrels Capacity – Section 21.

1. It is not clear whether the requirements of Section 21 stand in lieu of, or are in addition to, those in Section 16.4. It would be helpful to have all the construction requirements in one location, with the differentiation between small and large pits and impoundments in their own subsections, so the standards for large and small impoundments and pits would be clearer.
2. Operators should be allowed to use standard designs for the construction of pits and impoundments that have been approved by a professional engineer. We would appreciate confirmation that Section 21.2.a does not require an individual plan for each pit or impoundment, and that operators can reuse standard plans that have been prepared by a professional engineer.
3. We agree that a pit or impoundment that meets the definition found in Section 21.4 is regulated under the West Virginia Dam Control and Safety Act, *W. Va. Code*. 22-14 -1 *et seq.*, but it is not clear to what extent the provisions of the Rule apply in the event that they are less stringent than the requirements of the West Virginia Dam Control and Safety Act. We suggest that the DEP forego regulating pits or impoundments based on size, and allow the Dam Control and Safety Act to govern large pits and impoundments, without additional requirements in this rule. If pits or impoundments are considered safe under the Dam Safety and Control Act, they should be considered safe for purposes of the Rule.
4. Requiring inspection of pits and impoundments every three days is excessive. It would not be unreasonable to require inspections after appropriate intervals, or after heavy rains, but a properly designed and constructed pit or impoundment that has been approved by the Office of Oil and Gas should not need inspection every three days.

III. Conclusion.

WVONGA appreciates the opportunity to offer these comments and looks forward to the response by the Department of Environmental Protection to its suggestions for improving the Rule.



Nicholas DeMarco, Executive Director
West Virginia Oil and Natural Gas Association
P.O Box 3231
Charleston, WV 25332
304-343-1609
wvonga@suddenlinkmail.com

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:48 PM
To: Martin, James A
Subject: FW:

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

-----Original Message-----
From: & garrett Garrett [mailto:garrettk@hardynet.com]
Sent: Monday, July 13, 2009 6:10 PM
To: DEP Comments
Subject:

I wish to make comments on the proposed rules regarding oil and gas wells.

It is not sufficient to allow the drillers when making their application to only notify the one name identified on the sheriff's tax ticket, esp.
when the tax card clearly identifies the other surface owners. Since the driller is required to do a ten-year search of the Grantor index, it is also not sufficent to allow them to only notify the other surface owners when the total number does not exceed three. Once the other owners are identified from the search, then all should be notified. Likewise, the driller should be obligated to notify the adjoining surface owners. All the drillers maintain "confidential" maps of the various areas and counties where they own leases or substrata, which show the boundary lines and surface owners of the entire area in which they are interested.
(Their agents swarm the local courthouses, the county clerks' and assessors' offices, showing little respect for the condition of the books and card catalogs they use to search for this information.) So they have the information needed to identify the adjoining surface owners, and they should be required to notify them of their application to drill. The same is true of the notification regarding testing of the water prior to fracturing a well. The adjoiners are just as likely to be affected by the activity as the surface owners, so they should receive the same notice. However, the notice prior to fracturing should NOT be a mere 48 hrs notice. That is theoretically no notice. A minimum of TEN days notice should be required. That would be a legally sanctioned notice, and would give the owners sufficient time to make inquiry of their rights and duties, and take whatever action might be appropriate. This would not be onerous on the drillers, since they will have planned the timing of their activity for months and years prior to sending the notice.

In addition, 1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.

2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.

3. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).

4. I fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.

5. I support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.

6. I support the requirement that all pits and impoundments be inspected every three days for the life of the structure.

7. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

8. DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

9. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.

10. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.

11. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.

12. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac"
water while it is underground, before it flows back to be disposed of.
This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.

13. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

14. A more complete analysis of the constituents of the well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reportedsto the landowner.

Respectfully submitted this the 13th day July, 2009.

Karen L. Garrett
11631 SR 259
Mathias WV 26812
304-538-2375

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:48 PM
To: Martin, James A
Subject: FW: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: david ruediger [mailto:druedig@yahoo.com]
Sent: Monday, July 13, 2009 8:24 PM
To: DEP Comments
Subject: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

1. A more complete analysis of the constituents of well water within at least a 10 mile radius from any we being "fracked" would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride) BEFORE any drilling takes place. At minimum, sodium concentrations should be measured in all water samples and reported to the landowner.
2. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.
3. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.
4. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).
5. I fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity c Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.
6. I support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.
7. I support the requirement that all pits and impoundments be inspected every three days for the life of th structure.
8. In addition, DEP should require prior notice be given to the surface owner and all landowners down

gradient before construction of all pits and impoundments.

9. DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.
10. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.
11. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.
12. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should REQUIRE that DEP **disclose** as well as **regulate** these chemicals.
13. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. **This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.**
14. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

I appreciate your consideration of my views as the protection of our drinking water is VITAL and NECESSARY.

Most sincerely,
David M. Ruediger
2193 Charleston Road
Spencer WV 25276

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:49 PM
To: Martin, James A
Subject: FW: Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Allen Johnson [mailto:allen@christiansforthemountains.org]
Sent: Tuesday, July 14, 2009 3:30 PM
To: DEP Comments
Subject: Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

West Virginia Department of Environmental Protection
601 57th Street S.E.
Charleston, WV

July 14, 2009

I just learned you are having a public comment meeting this evening at 6:30 pm on DEP Rule 35-CSR-4 which involves regulations for Oil and Gas Wells. Specifically the concern is over the new technology that can tap into deep lying Marcellus Shale formation to procure natural gas.

I live in Pocahontas County. Last fall a virtual "feeding frenzy" of leasing occurred. Many folks saw easy money, their lands now an easy road to riches. My reaction (and I'm a longstanding landowner) was fear that the high quality water of our county and surrounding region could become contaminated and/or depleted unless rigorous safeguards are in place and enforced.

I am familiar with the environmental history of West Virginia, and familiar with the grip that the coal industry (and to a lesser degree, other extractive industries) has had and continues to have on our state. With respect to coal, I do not feel the WV Department of Environmental Protection is protecting us. As you are well aware, a suit is now in place to force the hand of the federal EPA to take over our state EPA. I support this. I am appalled, for example, that a recent recommendation was made to increase allowable mercury because "West Virginian's do not eat as much fish per capita." Well, my wife and kids eat fish (or used to)!!!

Back to regulations of Oil and Gas, I urge that all fracking fluids be qualitatively analyzed. That is, the ingredients on file and accessible to regulatory oversight. I urge that all contaminated water (as in holding ponds) be transported to offsite approved treatment facilities. I urge that groundwater recharge capacity be established at any drilling site so that water quantity is not reduced for streams and neighboring wells. Finally I urge that baseline water testing in adjacent wells be performed prior to drilling sufficient to establish legal culpability if a well later becomes contaminated. For this latter

point I use as an example the West Virginia communities of Rawls and Prenter where apparently the nearby coal slurry injection cannot be shown as direct cause of the contaminated wells and poisoned people.

I close saying that I will vigorously act to protect the water quality and quantity in Pocahontas County, my home place. As a Christian I am not going to be swayed by economic interests or "the nation's energy interests" over that of protecting God's creation against pollution and defilement. I believe drilling can possibly be responsibly done to procure this gas. Drilling may be more expensive. However, I also believe that much of the extractive industry will take shortcuts if they can get by with it, as evidenced by 120 years of the coal industry practices. Coal continues to externalize much of its costs onto the public (present and future generations), for their own short term profit, for severance tax revenue for government, and for lower power bills for consumers. While mercury continues to retard brains, pollutants trash lungs, and foul water kills fish and poisons people.
Recall that Forbes.com in October 2007 rated West Virginia as #50 for being a "Green State."

You are the Department of environmental PROTECTION.

Speaking my mind and heart as a West Virginia citizen...

-Allen Johnson
Rt. 1 Box 19-B
Dunmore, West Virginia 24934

COMMENTS 35CSR4

John & Sally Snyder
921 Little Pigeon Road
Pigeon, WV 25164-9443

snyder.je@gmail.com
priusowner01@gmail.com

Below please find our comments on the proposed changes to 35CSR4.

5.5 Identifications Markings

The pit location whether containing waste or having the drilling waste removed should be marked and monitored for the present surface owner and any future owners. If waste is buried there should be some type of marker identifying who constructed the pit, what was the purpose of the pit, who to contact should there be a leak, etc., and the responsible party if there is every any liability associated with the pit, presently or in the future.

35-4-9 Form and Contents of Plats

9.2.c. **Plats should also contain the exact surveyed route and location planned for gathering pipelines crossing surface owners land. The practice as it exists now allows the driller to bulldoze a pipeline right of way any where they want to after the well is drilled.**

9.2.1 Should be changed to read **"Water wells within (1000) feet of the well for which any permit under WV Code '22-6-6 is being sought, except .....**

9.2.2 Should be changed to read **"Dwellings within (1000) feet of the well for which any such permit is being sought";**

35-4-10 Separate Bonds. **It is our belief that this section should have an additional bond requirement for any driller applying for a drilling permit for the protection of and insurance that surface owners are protected from damages occurring during the drilling and gathering pipeline installation. By not requiring a bond for the protection of surface damage as the law is now written means that many surface land owners do not receive adequate or in some cases any compensation for damages. The damage exceeds the contemplation of the parties at the time the minerals were severed in most cases.**

35-4-10 Hearings. **It is our belief that this section should be amended to allow a hearing for any person who files Comments and Objections with WV DEP**

Office of Oil and Gas regarding a drilling permit. A hearing is especially pertinent at this time because of the technological advancements in drilling techniques requiring larger areas of surface land, the use of chemical formulas and immensely large amount of water. At the present time persons filing Comments and Objections with WVDEP in response to a drilling permit are told that their comments and objections will remain a part of their file, achieving nothing. The combination of the technological advancements requiring larger areas of surface land, the use of chemical formulas and immensely large amount of water go beyond the contemplation of the parties at the time the minerals were severed, generally speaking.

35-4-16 Reclamation.

16.2. Access Roads- This section should be amended to read **"All access roads shall be constructed and maintained to prevent ANY sedimentation/runoff whatsoever from entering the waters of the State of West Virginia"**

16.3 Drilling Sites – **This section should be amended to read "Drilling sites shall be constructed and maintained to prevent surface runoff carrying ANY sedimentation from the site, to confine ALL materials to be used as a result of drilling operations in membrane lined containment areas enabling environmentally safe cleanup of spills, and to prevent ALL sedimentation by not placing, in any stream, any material moved or cut"** "Upon the plugging of a non-productive well, whether as a continuous operation with other permitted well work or otherwise, all cementing and other waste materials resulting therefrom shall be retained on the drilling site". ******** How will the waste material be retained on the drilling site? Buried, injected, etc?**

16.4.b Provisions should be made for diverting surface water from the pits and impoundments. *******What are the plans for diverting the surface water from the pits and impoundments? Who makes the plans? Just saying it doesn't make it happen. Need specific details.**

16.4.c. All pits and impoundments shall have adequate freeboard to prevent overflow, and in no case shall the freeboard be less than two (2) feet. When an operator is unable to maintain adequate freeboard to prevent overflow the operator shall notify the district inspector and an additional pit (or alternative overflow facility) shall be constructed under the supervision of the Chief. The additional pit or alternative overflow facility shall also meet the requirements specified in this section (16.4). *******Does this mean the Chief will do a site visit? When the operator has to go through the district inspector and an alternative or overflow facility shall be constructed under the supervision of the Chief some time could elapse – does the pit continue to overflow? Or what happens?**

16.4.d. All pits and impoundments shall have a synthetic **impermeable** liner to prevent seepage or leakage. All such **impermeable** liners shall be installed in such a manner as to protect the structural integrity of both pit or impoundment and liner, **thereby protecting the environment.**

16.7.c.1A **This section needs to be amended to deal with lines crossing lands used for all purposes present, and in the future.**

35-4-17. Preventing Waste. **This section needs to include the issue of flaring which is done on some wells, which presents unsafe conditions and unhealthy environment around the well, releases VOC and greenhouse gases, and wastes a lot of gas.**

35-4-18. Variances. This section grants the Chief a lot of latitude for variances, while providing notice of his proposed action to the public and to the surface owners of record and any coal owner, operator or lessee and provide all such persons with an opportunity to comment on such a proposal. **Once again there is the opportunity for the public, surface owners and coal owners, operators or lessee the opportunity to comment, but nothing beyond making the comments a part of the file. What would this achieve with regard to changes in any variance the Chief wants to grant?**

John Taylor 07/14/2009

Sally Snyder 07/14/2009

(304) 565-3065

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:44 PM
To: Martin, James A
Subject: FW: Gas mining

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

-----Original Message-----
From: mrmodes@jimisnyder.com [mailto:mrmodes@jimisnyder.com]
Sent: Monday, July 13, 2009 9:00 AM
To: DEP Comments
Subject: Gas mining

Hi-

As a long time resident of West Virginia and someone with a family downslope of a Marcellus Shale gas well- I am concerned about possible water quality effects of these gas wells. The well here is just above one of the finest trout streams in the county and I understand they are pumping all kinds of undisclosed chemicals and salts into the strata around here. I would like more controls and disclosure brought to bear on this as soon as possible.

Please consider my viewpoint and your obligation to protect the citizens of this this great state when you consider DEP Rule 35-CSR-4.

I concur with the West Virginia Env. Council points which are as follows:

1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage.
DEP should be applauded for making this long-overdue change.
2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.
3. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).
4. We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand
(5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.
5. We support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.
6. We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.
7. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

8. DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

9. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.

10. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.

11. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.

12. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.

13. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

14. A more complete analysis of the constituents of the well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.

Thanks for your attention to this matter,

Jim Snyder
Rt.1 Box 30
Albright, WV 26519 304-329-3310

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:45 PM
To: Martin, James A
Subject: FW: Public Comment re: 35-CSR-4 pertaining to Oil & Gas Wells & Other Wells

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Ginger Must [mailto:gingerm@mail.mln.lib.wv.us]
Sent: Monday, July 13, 2009 11:20 AM
To: DEP Comments
Subject: Public Comment re: 35-CSR-4 pertaining to Oil & Gas Wells & Other Wells

Monday, July 13, 2009

To Whom It May Concern:

I am a citizen of Pocahontas County and reside in the southern part in the Hillsboro area. Historically, we have always been fortunate to have a good supply of ground water for the town of Hillsboro and the surrounding Little Levels area from which our people have found their supply of water. Although I am not a professional in this field, I have often been told that we sit astride what could be called an underground body of water. Contamination of this underground body of water is of concern to every landowner and resident in the area for obvious reasons. With the increased interest in drilling domestically for gas and oil, especially in the state of West Virginia, there has been major activity by gas and oil companies to obtain leases from landowners for drilling in this area of Pocahontas County at some time in the future. In light of this, I am very concerned that our environmental regulations are not sufficiently written to protect the ground water from industrial pollution and the property rights of area property owners from the adverse impact of this drilling activity.

Please consider the following issues of concern listed below. They have been raised by a broadbased, grassroots coalition of concerned citizens and environmental advocates who are truly concerned about our communities and, as a result, have become quite well read on the issues. The environmental impact of industrial activity in our communities, as well as the long term impact on the property values of area real estate, are both vital areas of concern which should be studied thoroughly before a new wave of domestic drilling for gas and oil occurs in our beautiful state. Very few issues could be more important for those of us who call West Virginia our home.

Thank you for your consideration on these fourteen areas of concern.

Elwood Groves
HC 64 Box 195
Hillsboro WV 24946

1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.

2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.

3. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).

4. We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.

5. We support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.

6. We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.

7. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

8. DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

9. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.

10. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.

11. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.

12. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.

13. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

14. A more complete analysis of the constituents of the well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:48 PM
To: Martin, James A
Subject: FW: Oil & Gas Rules Comments
Attachments: ATT871702.txt

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Michael Choban [mailto:choban@wvwc.edu]
Sent: Monday, July 13, 2009 7:15 PM
To: DEP Comments
Subject: Oil & Gas Rules Comments

DEP Representative:

Following are my comments/concerns regarding the Oil & Gas Rules under consideration:

- Reclamation of pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities. Drillers should not be allowed to bury the liners and the waste contained in them on a surface owner's land. The current practice of burying pit waste sterilizes the area from future construction and other uses.

- The rule has no limitations on pit location with respect to ground or surface water. DEP should develop location requirements for pits to prevent contamination of freshwater and to protect human health and the environment.

- The construction and reclamation plans for oil and gas wells should show where the pipeline is going to go and how it is going to be reclaimed.

- I support the requirement that a registered professional engineer should design and certify pit plans and inspect all pits and impoundments before the pit is used.

- If a potential hazard is discovered during an inspection, it should be required to be reported immediately to DEP and appropriate emergency agencies.

- West Virginia has no requirement for disclosure and regulation of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals and require their disclosure.

Thank You,

Michael C. Choban
Rt. 9, Box 466
Buckhannon, WV 26201
==========
choban@earthlink.net

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:50 PM
To: Martin, James A
Subject: FW: COMMENT ON GAS AND OIL DRILLING

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Mark Blumenstein [mailto:info@lowergreenbrierriver.org]
Sent: Sunday, July 12, 2009 8:30 PM
To: DEP Comments
Subject: COMMENT ON GAS AND OIL DRILLING

Water and land are our most precious of resources ,therefore all care should be taken to protect the land the water and the landowner!

1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.

2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.

3. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).

4. We fully support the addition of section 35-4-21 Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels. This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.

5. We support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.

6. We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.

7. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

8. DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

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Mark Blumenstein, President
Friends of the lower Greenbrier River
PO BX

277 Alderson , WV 24910
info@lowergreenbrierriver.org

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:50 PM
To: Martin, James A
Subject: FW: {Fraud?} Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: Jermckeen@aol.com [mailto:Jermckeen@aol.com]
Sent: Sunday, July 12, 2009 10:21 PM
To: DEP Comments
Subject: {Fraud?} Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

An increase in drilling in recent years has revealed serious deficiencies and problems with the regulation of oil and gas drilling in West Virginia. The drilling of wells to the Marcellus Shale formation takes these existing problems to a new level, and heightens the need to address existing problems with the rules and to address new concerns about surface disturbance, water use and waste disposal.

1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.

2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.

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4. We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.

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Jerry and Julie McKeen
Rt. 2 Box 54
Bristol, WV 26426

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:44 PM
To: Martin, James A
Subject: FW: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

From: pjruediger@yahoo.com [mailto:pjruediger@yahoo.com]
Sent: Monday, July 13, 2009 9:06 AM
To: DEP Comments
Subject: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

1. A more complete analysis of the constituents of well water within at least a 10 mile radius from any well being "fracked" would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride) BEFORE any drilling takes place. At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.
2. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.
3. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.
4. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).
5. I fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.
6. I support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.
7. I support the requirement that all pits and impoundments be inspected every three days for the life of the structure.
8. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.
9. DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.
10. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and

appropriate emergency agencies.

11. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.
12. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should REQUIRE that DEP **disclose** as well as **regulate** these chemicals.
13. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. **This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.**
14. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

I appreciate your consideration of my views as the protection of our drinking water is VITAL and NECESSARY.

Most sincerely,
Pamela Ruediger
2193 Charleston Road
Spencer WV 25276

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Wednesday, July 15, 2009 4:26 PM
To: Martin, James A
Cc: Bennett, Annette L
Subject: FW: Proposed Changes to 35-CSR-4

From: Lynn Hunter [mailto:dhunter@wirefire.com]
Sent: Tuesday, July 14, 2009 6:22 PM
To: DEP Comments
Subject: Proposed Changes to 35-CSR-4

Dear DEP:

We would like to offer the following comments regarding the proposed changes to 35-CSR-4:

1. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. Thank you for a long-overdue change.
2. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities. Drillers should not be allowed to bury the liners and the waste contained in them on a surface owner's land. The current practice of burying pit waste sterilizes the area from future construction and other uses.
3. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).
4. The construction and reclamation plans for oil and gas wells should show where the pipeline is going to go and how it is going to be reclaimed. This is not the case now. Surface owners are surprised when the bulldozer takes off in a new direction that was not designated on the well work application and the operator tells them for the first time that there is going to be a pipeline there.
5. We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater resources throughout the drilling process, and will provide for more responsible reclamation.
6. We support the requirement that a registered professional engineer design and certify the plans for and inspect all pits and impoundments before the pit is used.
7. We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.
8. In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.
9. DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.
10. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.
11. Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.
12. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.
13. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.
14. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5,000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.
15. A more complete analysis of the constituents of drinking well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.

Thank you for attention and consideration.

Sincerely,

Arch G. Hunter, Jr. and Diana L. Hunter

362 Canoe Run Road, Looneyville, WV 25259

304-927-1646

EQT

Comments of

EQT Production

On the

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S PROPOSED CHANGES TO TITLE 35 CSR 4

July 1, 2009

I. INTRODUCTION

EQT Production develops, produces and sells natural gas and related products in the Appalachian region of the United States. EQT is the largest operator in the Appalachian Basin and EQT is actively developing its Marcellus Shale reserves in West Virginia.

EQT prides itself on its safety and environmental protection record and supports the West Virginia Department of Environmental Protection's efforts to increase safety and minimize potential environmental impacts associated with drilling, completion, and fracturing procedures. Any changes made should help both the industry and the DEP to ensure the responsible development of natural gas and to realize the economic opportunities that the Natural Gas industry presents for West Virginia.

EQT Production has reviewed the WVDEP's proposed rule changes to Title 35 CSR 4 offers the following comments.

II. COMMENTS.

A. 21.1

The location of pits and impoundments is already required on plats and plans. Could this fulfill the requirement in this section to notice construction of all pits and impoundments to the Office of Oil & Gas prior to construction, or is additional notice required?

Who in the office shall we give construction notice to? Giving notice to a particular inspector or division may create more concise communication between agency and operator.

B. 21.2.b.

All plans designed will be unique and specific for each site. There is no generic plan for these structures due to individual site variances.

C. 21.6.a.

A receipt from the Chief's office after the professional engineer sends in the written certification would be useful to help insure that the company knows when it's allowed to place fluid into the pit or impoundment.

Building plans sometimes need to be slightly changed during building phases due to site specific reasons and there needs to be a protocol in place to handle this situation, otherwise this could lead to significant down time.

D. 21.6.b.

Since all pits and or impoundments will now need to be inspected and certified initially by a registered professional engineer, the requirement to inspect them every 3 days may not be needed during periods of dry weather. Different inspection requirements could be required after a significant rainfall or in periods of no rainfall.

III. CONCLUSION

EQT looks forward to working with the DEP and appreciates the opportunity to comment on these proposed changes. EQT is encouraged by the DEP's working relationship with industry members and looks forward to future work with the WVDEP insuring that the industry continues to develop while still maintaining safety and protecting the environment.

IOGA
WEST VIRGINIA

July 14, 2009

VIA ELECTRONIC MAIL AND U.S. MAIL
Public Information Office
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304
Attn: Kathy Cosco

Re: **Comments on Proposed Revisions to 35 CSR 4**

Dear Ms. Cosco:

On behalf of the Independent Oil and Gas Association of West Virginia, Inc. ("IOGA"), I am submitting comments regarding the West Virginia Department of Environmental Protection's ("WVDEP") proposed revisions to Title 35, Series 4 of the West Virginia Code of State Rules (hereinafter "35 CSR 4"). IOGA is a statewide non-profit trade association representing companies engaged in the exploration, production and development of natural gas and oil resources in West Virginia, and the companies and individuals who support these activities. We appreciate the opportunity to offer these comments.

General Comments

IOGA supports WVDEP's decision to update the permit fee information in 35 CSR 4 to make this fee information consistent with the permit fees mandated by statute. This change will remove any confusion that may have arisen due to the differences between the permit fees listed in the current version of the rule and the statute. IOGA also supports the minor technical and grammar revisions that are contained in the proposed rule.

IOGA is concerned, however, with the process that WVDEP employed to develop and propose the revisions to 35 CSR 4. Although environmental groups, citizens and other industries regulated by WVDEP are represented on the Environmental Protection Advisory Council and therefore have the opportunity to review draft rules and offer constructive comments before the rule is submitted to the Secretary of State for public comment, the oil and gas industry is not so represented. As such, IOGA's members and others in the oil and gas industry have not had the opportunity to raise our concerns with WVDEP during the formative phase of the rulemaking process. WVDEP can reject all of these informal suggestions, but IOGA believes such a dialogue will consistently lead to more effective regulation and a more constructive relationship than will exist if

IOGA and others are shut out of the preliminary steps of the rulemaking or bill-drafting processes.

IOGA's belief that this recommended process can be successful at bringing about necessary change has been proven in previous years. For example, IOGA worked hand-in-hand with WVDEP and the Office of Oil and Gas ("OOG") to revise the statute to raise the permit fees several years ago. After being approached by WVDEP regarding the potential funding gap that OOG faced at that time, IOGA agreed to support raising fees with the Legislature. IOGA encourages WVDEP to involve IOGA and others in the regulated community along with the stakeholders already represented on the Advisory Council in the formation and development of statutory and regulatory revisions.

Specific Comments

IOGA supports WVDEP's ongoing efforts to identify potential issues related to oil and gas development and update 35 CSR 4 as needed to address these issues. However, IOGA is concerned that although WVDEP has identified some of areas that need to be addressed, several of the changes in the proposed rule are not the appropriate steps needed to address these issues.

A. Section 2 - The rule should provide flexibility regarding the definition of freshwater impoundments and wastewater pits.

IOGA is unsure as to the rationale for WVDEP's decision to create a definitional distinction between freshwater impoundments and wastewater pits. The rule imposes the same design, construction, and maintenance requirements on both pits and freshwater impoundments, regardless of what sort of liquids are being stored in the pit/impoundment. The only difference that IOGA has identified in the proposed rule between how the wastewater pits and freshwater impoundments are regulated is that freshwater impoundments with a capacity greater than 5000 barrels may be left in place on a permanent basis if certain conditions are met, while no wastewater pits can be left in place on a permanent basis. IOGA requests that WVDEP confirm as correct IOGA's understanding that proposed rule imposes the same requirements on all pits and freshwater impoundments depending on their size with the one exception noted above. For example, pits and freshwater impoundments that are 2500 barrels have the same requirements pursuant to section 16.4 and pits and freshwater impoundments of 5500 barrels have the same additional requirements pursuant to section 21. IOGA also urges WVDEP to consider creating alternate definitions for pits and freshwater impoundments with a capacity greater than 5000 barrels.

IOGA's proposed revisions:

With regard to the proposed definition of "impoundment" in section 2.10., IOGA believes a minor change will be critical to clarifying this definition. The term "impoundment" as generally used means a structure for enclosing a body of water,

which could include, for example, fresh water, wastewater, sludge or slurry. The proposed rule takes this general term and defines it in a very limited way, i.e., "a man-made excavation or diked area for the retention of fresh water and into which no wastes of any kind are placed." It is our suggestion that the phrase "Freshwater Impoundment" be substituted for the term "Impoundment" in this rule to more accurately designate the structures being regulated.

With regard to the proposed definition of "pit" in section 2.14 it is suggested that the proposed definition be revised to reflect the use of the term "pit" in the current General Water Pollution Control Permit No. GP-WV-1-88. As revised, the definition would read as follows:

- "Pit" shall mean a man-made excavation or diked area used to manage treated wastewaters generated during exploratory/developmental drilling, reworking of wells, plugging operations, well treatment operations or other activities as approved by the Office of Oil and Gas on a site specific basis.

IOGA also believes that definitions for "large-volume pits" and "large-volume freshwater impoundments" would help avoid confusion regarding whether a particular pit or freshwater impoundment is subject to the additional requirements of section 21. These definitions should be inserted for "pit" and "freshwater impoundment" throughout section 21.

- "Large-volume freshwater impoundment" means a freshwater impoundment as defined in section ___ of this rule which has the capacity to store more than 5,000 barrels."

- "Large-volume pit" means a pit as defined in section ___ of this rule which has the capacity to store more than 5,000 barrels."

B. Section 9.2.i. – UTM coordinates should not be imposed as a mandatory requirement at this time.

IOGA is concerned that WVDEP's proposed requirement that the topographic map location of a well included include Universal Transverse Mercator ("UTM") Zone 17 Northing and Easting coordinates would be an unnecessary expense that will not give WVDEP or the public any additional meaningful information. IOGA has consulted with surveyors who have indicated that they do not have the capacity at this point to use the UTM coordinate system. In addition, the proposed rule does not define how accurate the coordinates must be. The current rule already requires that the well location be marked with a measured distance from the nearest 2.5 minute longitude and latitude intersection so IOGA does not believe the UTM requirement will provide WVDEP with information that it does not already have.

IOGA urges WVDEP to delete the UTM requirement from the proposed rule while it consults with stakeholders, including representatives of professional surveyors, regarding the costs and benefits of the UTM requirement. If WVDEP decides to go forward with the UTM requirement after such consultation and investigation, IOGA urges WVDEP to make the requirement optional and leave the 2.5 minute longitude and latitude requirement as the default approach.

C. Section 16.4.c. - The new freeboard requirements are overly restrictive.

IOGA believes the proposed rule should include more flexibility with regard to the freeboard requirement. It is inevitable that there will be variation in the liquid levels within these pits and it unreasonable to expect operators to continually monitor the pit to ensure than there are at least 24 inches of freeboard at all times. Taken to the absurd, this requirement could lead to an inspector finding an operator in violation of this rule when a pit has 23.5 inches of freeboard. Although IOGA trusts that the inspectors will use appropriate discretion, we believe that modifying this requirement to say that the pit should have "approximately" the specified amount of freeboard will address this issue.

IOGA also believes that some pits may be constructed in such a manner that two feet of freeboard is overly protective and result in significant excess excavation of the surface area. We recommend that the agency specify a lesser freeboard requirement (approximately one foot) as a minimum requirement with the option to increase that amount, up to two feet, should the circumstances warrant greater freeboard.

IOGA's proposed revisions:

- "All pits and freshwater impoundments shall have minimum freeboard of approximately one (1) foot to prevent overflow. Where the chief determines that additional freeboard is warranted based on the circumstances at a particular site, he may require a pit or impoundment to have a freeboard of up to two (2) feet."

D. Section 16.4.d. - Pit liners are not appropriate in all circumstances.

IOGA shares WVDEP's concern with protecting the state's water resources from leaks from pits, but believes the requirement to install a pit liner in every circumstance is not appropriate. As an initial matter, it is IOGA's understanding that many operators already use pit liners as a default option in constructing pits. There are instances, however, when they may choose not to use a pit liner because the soil is impervious and the size, location, or future reclamation of the site makes the use of a pit liner unnecessary or inappropriate. Assuming that the soil can be compacted and made impervious, the more conservative and environmentally protective approach in some circumstances would be to avoid using a pit liner.

IOGA believes that the current system of requiring an impervious surface as the base of the pit has protected the surface and groundwater of the state. Not only do

operators have experience with determining whether the pit can be made impervious without the use of a pit liner, but if the chief has concerns during the permitting process that the pit may leak or seep he can require an operator to use a pit liner. Accordingly, IOGA urges WVDEP to retain the existing requirements that give operators the flexibility to make this decision on a case-by-case basis.

IOGA's proposed revisions:

- If existing soil is not suitable to prevent seepage or leakage, other materials, including but not limited to synthetic liners, which are impervious shall be used as a pit liner. ~~Any~~ All such liners shall be installed in such a matter as to protect the structural integrity of the pit, freshwater impoundment and liner.

E. **Section 21 - The rule should provide more flexibility regarding the design and maintenance of pits and freshwater impoundments with a capacity greater than 5,000 barrels.**

1. Applicability of design and construction requirements

WVDEP has proposed to add a new section 21 to 35 CSR 4 related to the design and construction of pits with a capacity of greater than 5,000 barrels. Although the heading for this section clearly states that it applies to pits and impoundments with capacity greater than 5,000 barrels, the individual subsections do not make this distinction. To address this problem we suggest that subsection 21.1 be revised to read as follows (and the subsequent subsections be re-numbered accordingly):

- The provisions of this section apply only to those pits and freshwater impoundments constructed with a capacity of more than 5,000 barrels.

IOGA also requests that the freeboard language proposed for section 16.4.d. be applied to large-volume freshwater impoundments and large-volume pits.

2. Design plans for large volume pits and impoundments

Many of the requirements in Section 21 are similar to the requirements contained in the WVDEP's December 16, 2008, Industry Directive regarding these large-volume pits. This Industry Directive and this proposed rule both ignore that these large-volume pit and large-volume freshwater impoundments are not uniform in their design or construction. Although some are constructed by building a dike or embankment above ground level to retain water, others are constructed by digging below ground level. IOGA believes the rule, as proposed, allows operators to develop standardized designs for above-ground level and below-ground level large volume pits and impoundments. These plans would be submitted for agency approval, and once approved could be used by the operator for future impoundment and pit designs where appropriate. Although WVDEP may require a professional engineer to certify the construction of an

above-ground large-volume pit or freshwater impoundment, for structures with 80 percent of their storage capacity located below ground level and which are constructed according to a standardized design, IOGA urges WVDEP to require a certification by a professional engineer only when the agency concludes that such a certification is necessary to ensure proper construction. It is IOGA's understanding that these below-ground impoundments are more likely to be constructed according to a standardized design and are typically less likely to require site-specific construction requirements than above-ground structures. We believe this approach would be protective of the environment and public health while lessening the burden on the companies. If it was determined that one of the standardized designs was not appropriate for use in a specific circumstance, the operator would be required to have a professional engineer design and certify a site-specific facility.

IOGA's proposed revisions:

21.6.a. Upon receiving notice of the construction of the structure pursuant to section 21.1, the Office shall have 10 business days to notify the operator whether the Office will require a large-volume pit or large-volume freshwater impoundment be inspected by a West Virginia registered professional engineer prior to the operator placing in fluids into the structure. In making this determination, the Office shall consider the storage size, dimensions, location and potential environmental and public health impacts.

21.6.a.1. Large-volume pits or freshwater impoundments with a minimum of 80 percent of their storage capacity located below ground level shall not be subject to the requirement that a professional engineer certify the construction, provided that the Office can require such a structure be certified upon a finding by the Chief that requiring the certification is necessary to minimize adverse environmental impacts or protect human health.

21.6.a.2. For large-volume pits and large-volume freshwater impoundments that are required to be certified by a professional engineer before being put into service, such certification must be filed with the Office and fluids cannot be placed into the structure until such certification is filed.

3. Inspections

Finally, IOGA believes the requirements to inspect these large-volume pits and impoundments every three days is excessive. For any structure covered by the Dam Control Safety Act, W.Va. Code § 22-14-1, *et seq.*, the requirements of that statute and the rules promulgated pursuant to it should govern the frequency of the inspections. The rules implementing the Dam Safety and Control Act require monthly inspections. No inconsistent requirement should be imposed in this proposed rule. For structures

that are not covered by the Dam Safety and Control Act, IOGA urges the WVDEP to modify section 21.6.b. to require inspections of these facilities based on the activities at the site. For example, during the period when the impoundment is receiving inflows of water, the facility should be examined every three days. If the facility is not receiving inflows, then monthly inspections – the same requirement that is contained with the Dam Safety Rules – should be sufficient to ensure the stability of the structure. Moreover, records of the inspection should be required to be kept on-site or at the field office where the impoundment is managed. We recommend that the requirement for monthly certification that inspections have occurred be deleted from this section as unnecessary. The OOG representative reviewing the inspection records will be able to determine whether or not the required inspections are taking place. Accordingly, the requirement of section 21.b.6 that an operator submit monthly certifications should be deleted.

IOGA's proposed revisions:

- 21.6.b. – Any large-volume pit or large-volume freshwater impoundment that meets the requirements of section 21.4 and is subject to the provisions of the West Virginia Dam Control and Safety Act, W.Va. Code § 22-14-1 *et seq.*, shall be inspected pursuant to the requirements of Title 47, Series 34 of the Code of State Rules

- 21.6.c. – "All large-volume pits or freshwater impoundments not subject to the provisions of the West Virginia Dam Control and Safety Act, W.Va. Code § 22-14-1 *et seq.* or the inspection requirements of Title 47, Series 34 of the Code of State Rules shall be inspected according to the following schedules:
  - 21.6.c.1 – Every three days during periods of inflow to the large volume pit or freshwater impoundment;
    - 21.6.c.1.a. – Inflow means the direct addition of water or other liquid to a large-volume pit or large-volume freshwater impoundment by the operator or someone working under the operator's control.
    - 21.6.c.1.b. – Inflow shall not include the addition of water or other fluids to a large-volume pit or large-volume freshwater impoundment due to precipitation.
  - 21.6.c.2 – Once per calendar month during periods when there is no inflow to the large volume pit or freshwater impoundment.

- 21.6.d. – Records of the required inspections, including date, time, name of the inspector, and the findings of the inspection, shall be maintained at the site of the large-volume pit or freshwater impoundment or at the office of the person responsible for conducting the inspections.

IOGA appreciates the opportunity to provide these comments on the proposed revisions to 35 CSR 4 and looks forward to WVDEP's response.

Very truly yours,

Charlie Burd
Executive Director

cc: Mr. James Martin, Chief, Office of Oil and Gas

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:45 PM
To: Martin, James A
Subject: FW: Rule 35-CSR-4, Regulating "Oil and Gas Wells"

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

-----Original Message-----
From: Betty Rivard [mailto:bettyrivard@yahoo.com]
Sent: Monday, July 13, 2009 12:21 PM
To: DEP Comments
Subject: Rule 35-CSR-4, Regulating "Oil and Gas Wells"

To the DEP:

Please accept the following comments on this proposed Rule. While I don't like to just cut and paste, I have reviewed these comments carefully and I agree with them.

I live in the watershed of a new Marcellus shale well, which is within about one-half mile from my house and 42 acres of land in Braxton County. It is uphill above a small tributary stream that runs into the creek that goes through my property.

I am concerned about the quality of the drinking well water for myself and my neighbors. I encourage the maximum protections and checks and balances related to this water.

The one addition I request is that there be some provision for monitoring of water downstream, not just on the property of the landowner where the well is located. I don't know exactly where this fits into the proposed rules or whether or not this is already provided for. I have read that the State of New York has had concerns about the overall effects of the Marcellus shale wells on their citizens and lands. I will appreciate anything you can do to reassure me that we are OK here or, if we are not, to prevent or address any problems.

Thank you for your attention to this message. I will not be able to attend the public hearing tomorrow, but I am requesting that you enter this into the record.

Sincerely,
Betty Rivard
HC 71 Box 855
Duck, WV 25063

The specific comments, as provided by the WV Environmental Council, are:

An increase in drilling in recent years has revealed serious deficiencies and problems with the regulation of oil and gas drilling in West Virginia. The drilling of wells to the Marcellus Shale formation takes these existing problems to a new level, and heightens the need to address existing problems with the rules and to address new concerns about surface disturbance, water use and waste disposal.

-Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.

-Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.

-The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).

-We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.

-We support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.

-We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.

In addition, DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

-DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

-If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.

- Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.

- West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.

- West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.

-This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

- A more complete analysis of the constituents of the well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:46 PM
To: Martin, James A
Subject: FW: 35-CSR-4

Kathy Cosco
Communications Director
WV Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
Office 304-926-0499, ext. 1331
Cell 304-561-8996

-----Original Message-----
From: lynn welsh [mailto:welsharch@yahoo.com]
Sent: Monday, July 13, 2009 4:00 PM
To: DEP Comments; lynn welsh
Subject: 35-CSR-4

Dear DEP,
Thank you for revising regulation of oil & gas wells. Please consider the following additions:
1) Reclamation must include removal of all solid wastes, including the liners, to an authorized off site waste disposal facility.
2) Limitations on pit location, especially in karst and alluvium soil, must be developed and implemented to protect surface & ground water as part of the new regulations. Coal mining has caused serious polution near towns. Now is a great time to prevent the same problems with oil & gas.
3) Prior notice must be given to downhill residents before the location of a pit or impoundment is approved. DEP needs to set standards how far away downhill residents need to be notified. West Virginians typically don't hear about potential dangers until it is too late to prevent them. This should also include emergency plans from drillers to protect or notify downhill residents for problems during drilling.
4) West Virginia MUST have disclosure and regulation requirements for what chemicals are being used to "fracture" a well. The back-flow water also needs to be inspected with it's disposal regulated in case of "out of norm" pollutants. Coal mining has polluted entire town water supplies. Please change the regulations to prevent oil & gas from doing the same.
Thank you.
Lynn Welsh

Martin, James A

From: Cosco, Kathy on behalf of DEP Comments
Sent: Tuesday, July 14, 2009 4:46 PM
To: Martin, James A
Subject: FW: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

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From: ourholler@aol.com [mailto:ourholler@aol.com]
Sent: Monday, July 13, 2009 2:25 PM
To: DEP Comments
Subject: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"

From: ourholler@aol.com
Subject: Citizen Landowner Comment on DEP Rule 35-CSR-4, Regulating "Oil and Gas Wells"
To: DEP.Comments@wv.gov
Date: Monday, July 13, 2009, 2:20pm

1. A more complete analysis of the constituents of well water within at least a 10 mile radius from any well being "fracked" would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride) BEFORE any drilling takes place. At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.
2. Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. DEP should be applauded for making this long-overdue change.
3. Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities.
4. The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).
5. I fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater water resources throughout the drilling process, and will provide for more responsible reclamation.
6. I support the requirement that a registered professional engineer design and certify the plans for and to inspect all pits and impoundments before the pit is used.
7. I support the requirement that all pits and impoundments be inspected every three days for the life of the structure.
8. In addition, DEP should require prior notice be given to the surface owner and all landowners down

gradient before construction of all pits and impoundments.

9. DEP should be require that drillers at the well site to have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.
10. If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.
11. Sections2016 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.
12. West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should REQUIRE that DEP **disclose** as well as **regulate** these chemicals.
13. West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. **This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.**
14. This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

I appreciate your consideration of my views as the protection of our drinking water is VITAL and NECESSARY.

Most sincerely,
Jane B. Lanham
2999 Sycamore Road
Culloden, WV 25510

George Mink

Questions and talking points for 35CSR4

Questions

What is the state's reasoning for not requiring a permit for each pit?

What is the state's reasoning for not requiring a permit for each dewatering impoundment (21.4 & 21.5)?

Is the state working on a revision or planning to revise the existing General Water Pollution Control Permit?

How is the size of a 5,000 barrel pit determined?
(Capacity of pit counting freeboard or some other assumption?)

What is the state's reasoning that a pit of 5,000 barrels capacity should require a Professional Engineer's certification and special requirements as in 21 and a pit of 4,980 barrels capacity should not?

What is the state's reasoning for the necessity for breaking pit regulations into two parts -- 16.4 and 21?

Main Point

As regulation is written an operator could drill a well 200 feet from a dwelling, put the pit in the front yard and land apply liquid waste from that pit in the back yard.

Talking Points for Pits

Lacks essential ground and surface water protection
- distance from bottom of pit to groundwater
- distance of pit to domestic and municipal water supplies
- distance of pit to surface water bodies

Lack of specific construction requirements
- no construction on fill soils
- PE certification of all pits
- pit liners -- needs specific liner type and thickness and installation requirements (anchor trenches, banks and welding)

Lack of specific operation requirements

freeboard to be 2 feet at all times (including break in liner or breach)

regular program of inspection for all pits

Lack of closure and reclamation requirements

3 feet cover

fully enclosed cell

no surface ponding

permanent marker

Talking Points for other parts of regulation

Definitions 2

needs a definition of "waters of the state"

Permits 5

separate permits for pits and dewatering

Identification Markings 5.5

there is a real problem with operators having API numbers on plugged and active wells. if this is a violation, shouldn't it be treated as such?

Well Records 12

require submission of MSDS information for all drilling and fracturing and workover chemicals and additives used on site

Reclamation 16

severely lacking

Erosion and Sediment Control Field Manual out of date

Water Sampling 19.3

public records or database

include at least methane (BTEX, sodium, etc.)

Comments for 35 CSR 4

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Our comments for 35 CSR 4 changes will be in two parts. The first part will focus on rule changes for pits and the new section for large volume pits. The second part will point out deficiencies in the rule in other sections that have not been changed. An example is the lack of a definition for "waters of the state" that we believe should appear in 35 CSR 4.2 under Definitions.

We are attaching as appendices material that we'll refer to in these comments. Appendix 1 is the Pits section of our *Comments for the Total Dissolved Solids Water Standards Criteria* (July 2009),[1] Appendix 2 is the *Interim Environmental Assessment for 47-079-00731 and 47-079-01492, Putnam County, West Virginia* (June 2009),[2] and Appendix 3 is *Waste Pits, Draft Recommendations for Pit Regulations* (2009)[3] which appeared on our web site.

Appendix 1 offers an overview of what we feel are important deficiencies in the state's current program related to pits. This appendix provides the reasoning for many of our comments and appeared first in a slightly different form on our Sootypaws blog.

The *Interim Environmental Assessment* that appears in Appendix 2 provides an example of what can happen when an operator improperly sites and closes a pit. We've been able to document the pit polluting a river hundreds of feet away.

Our *Waste Pits, Draft Recommendations for Pit Regulations* (hereafter called *Draft Recommendations*) appeared in spring 2009 on our web site and forms Appendix 3 of these comments. The details of the direction we believe the state should be moving toward appeared first here.

We provide full citations for the resources used in our comments, including web URLs, in the Sources section at the end of the comments and at the end of appendices 1 and 2.

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[1] George Monk and Molly Schaffnit, 2009, *Comments for the Total Dissolved Solids Water Standards Criteria.*

[2] George Monk and Molly Schaffnit, 2009, *Interim Environmental Assessment for 47-079-00731 and 47-079-1492, Putnam County, West Virginia.*

[3] George Monk and Molly Schaffnit, 2009, *Waste Pits, Draft Recommendations for Pit Regulations.*

Part One

Pits and Large Volume Pits

Broadly, we don't believe the revised regulation as it appears in 35CSR4.16.4 and 35CSR4.21 is protective enough of the environment and health and safety of persons. We believe that specific requirements are necessary in regard to siting pits and impoundments (we use the word pits generally, below, for both) in relation to surface and ground water, domestic and municipal water supplies, and buildings used by persons (residences, schools, businesses, churches, etc.). As the rule is written, an operator could legally put a well 200 feet from a residence, the pit in the front yard and land apply waste in the back yard. We believe all pits should require individual permits, that all should be certified by a Professional Engineer, and all should have specific closure requirements, including permanent marker and deed notice.

We realize some of these specifics could be managed satisfactorily in a permit's requirements (such as they now occur in the General Water Pollution Control Permit),[4] or site construction and reclamation requirements (such as they appear in the *Erosion and Sediment Control Field Manual*).[5] Unfortunately, both the General Permit and the Field Manual are woefully out of date and don't come close to meeting current needs, much less the more stringent requirements we believe are necessary.

We're concerned that the state is again approaching the problems of pits, and the way industry constructs and utilizes pits, in a piecemeal fashion. We believe, as we'll state again below, that all pit regulations should appear in a single section of the Code. We believe that the state should determine to use the power it has to regulate an industry that other states have found to be willful and capricious.[6] The anticipated regulation changes don't do nearly enough to protect the state's environment or its citizens.

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[4] West Virginia Office of Oil and Gas, *General Water Pollution Control Permit.* GP-WV-1-88. Hereafter cited as General Permit.

[5] West Virginia Division of Environmental Protection, 1992, *Erosion and Sediment Control Field Manual.* Hereafter cited as Field Manual.

[6] For example, Arkansas in its pit permit states: "Pit construction in streams, creeks, ponds, or other water bodies is strictly prohibited" (part II, page 1). Obviously this wouldn't be in the permit if industry hadn't actually used ponds, creeks and streams as pits. The Railroad Commission of Texas in its *Surface Waste Manual* states: "Operational procedures which may endanger the integrity of a lined pit are: . . . 2. Operation of a vehicle over any portion of an exposed liner." Obviously, this would not need to be stated if this weren't a frequent problem. Arkansas Department of Environmental Quality, 2008, *Authorization to Construct, Operate and Close the Pits Associated with Oil and Gas Well Exploration* and Railroad Commission of Texas, *Surface Waste Management Manual, Chapter 4, Pits.*

16.4.a. ~~Any~~ All pits and impoundments shall be constructed and maintained so as to prevent seepage, leakage or overflows, and to maintain ~~its~~ their integrity.

This subsection needs additional wording such as "in order to protect the waters of the state" after "integrity." The wording of this subsection should provide a rationale rather than just a description of what can go wrong.

16.4.c. All pits and impoundments shall have adequate freeboard to prevent overflow, and in no case shall the freeboard be less than two (2) feet. When an operator is unable to maintain adequate freeboard to prevent overflow ~~from any pit~~, the operator shall notify the district inspector ~~shall be notified by the well operator~~ and an additional pit (or alternative overflow facility) shall be constructed under the supervision of the Chief~~,~~. The additional pit or alternative overflow facility ~~which~~ shall also meet the requirements specified in this ~~sub~~section (16.4).

We wholeheartedly agree with the change made. We believe quantification, often currently lacking, is required for construction, operational and reclamation requirements for oil and gas activities.

16.4.d. ~~If existing soil is not suitable to prevent seepage or leakage, other materials which are impervious shall be used as a liner for a pit.~~ All pits and impoundments shall have a synthetic liner to prevent seepage or leakage. ~~Any~~ All such liners shall be installed in such a manner as to protect the structural integrity of both pit or impoundment and liner.

We agree that liners are absolutely required for all pits and impoundments. We believe that a specific type and thickness of liner should be given as a minimum requirement for temporary pits (such as 20 mil LLDPE) and for permanent pits (60 mil HDPE, dual lined with leak detection).

We also believe that specific requirements for the installation of liners, including anchor trench description and width of levee wall, are necessary. If these requirements are not stated in regulation, they must be explicitly stated in the permit. We'll discuss liners and installation more fully below.

16.4.e. Dikes and embankments associated with pits and impoundments shall be constructed of compacted material and maintained with a slope that will preserve the structural integrity of such dike or embankment.

This subsection needs to be more detailed. The intent is vague. Either add "in order to protect waters of the state" and have fuller requirements in a permit, or disallow the use of fill soils without written permission from the Office of Oil and Gas (OOG).

> 16.4.g. Reclamation of the pits and impoundments shall not cause an overflow and/or discharge of materials to waters of the state.

Reclamation requirements need to be more fully detailed. Closure should require either encapsulation or removal of pit contents. Cover should be 3 feet minimum over encapsulated cell. Soil should be contoured to prevent ponding before seeding. Our *Draft Recommendations* (sections 5.004-5.008) provides a description of widely accepted closure requirements (page 33 in Appendix 3)

> 16.4.h. All ~~drilling~~ pits, and impoundments, and alternative overflow prevention facilities shall be constructed, maintained, and reclaimed so as not to be left in such condition as to constitute a hazard or to prevent use of the surface for agricultural purposes after the expiration of the six (6) month or extended period for reclamation prescribed by W. Va. Code §22-6-30. The reclamation period for pits permitted with multiple wells shall be calculated from the date the last well was drilled.

Wells are being drilled in and around urban areas. The "agricultural purposes" in this subsection is inappropriate or should have its own subsection. Pits should be constructed, operated and maintained, and closed and reclaimed so as to protect the state's environment and residents' safety and health.

Large volume pits

On the whole we agree with the wording and intent of this section. We believe its effectiveness is diminished because of vagueness of wording at points. It is also not explicitly clear that this section states requirements in addition to those given in 16.4. We're not sure why the Department felt it was necessary to create a whole new section for larger pits.

> 21.1. All pits and impoundments used in association with an oil and gas operation, whether permitted or not, shall be constructed only in locations appropriate for the storage of water, including wastewater, and shall be designed, constructed, located, maintained, and used in accordance with this rule and in such a manner as to minimize adverse environmental impacts and to assure safety to the public.

> Notice of construction of all pits and impoundments shall be provided to the Office prior to construction. Such notice shall identify the location and dimensions of the pit or impoundment. The Office shall have the authority for inspection of these sites and the enforcement of this rule.

We believe a separate permit for each pit would satisfy many of the requirements of this subsection and would have stronger effect instead of Notice of construction etc. Ideally, pits under 5,000 barrels could use a general permit; larger pits would require a special permit based on the general permit.

The last sentence (The Office shall etc.) seems to indicate that the OOG doesn't have the authority to inspect smaller pits. Again, we don't understand why the requirements in Section 21 shouldn't appear in 16.4 (or vice versa).

The separation of a 5,000-barrel pit, from "smaller" pits, creating special requirements so that a 4,980-barrel pit does not have to meet these same requirements seems perverse. Is there some overriding rationale for why a pit having 20 barrels less doesn't require "construction only in locations appropriate?" The 5,000-barrel cutoff point is artificial and arbitrary. Large volume pits do require care in siting and construction, but so do smaller volume pits.

We believe the Department should move the requirements in section 16.4 to section 21, making section 21 the state's pit rule, whole and coherent.

> 21.2.a. Be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer;

We agree that a Professional Engineer should be required to certify all pit design and construction. We believe this is true for all pits, regardless of size (see our *Draft Recommendations,* section 1.002, page 27 in Appendix 3).

As worded the subsection could mean that a possibly inappropriate "one size fits all" pit plan could be used. We believe that a West Virginia registered Professional Engineer's making a site-specific plan for each pit constructed would best ensure public safety.

> 21.2.b. Provide adequate freeboard of no less than two (2) feet to resist overtopping by waves or sudden increases in volume and to provide adequate slope protection against surface erosion and sudden drawdown; and

Freeboard of 2 feet should be required at all times. As worded this is just a design requirement. At all times means that if the pit develops a breach or

there's a break in the liner, the freeboard must be maintained so the level of the pit is 2 feet below the breach or break.

> 21.3. In constructing the dike or embankment, the operator shall remove all topsoil from the foundation, install cutoff trenches where necessary to ensure stability, provide for proper compaction and ensure against excessive settlement by excluding sod, roots or frozen soil from the embankment. Permanent vegetative cover, free of brush and trees, shall be established on all dikes and embankments.

Vegetative cover is a good requirement. We believe 70% cover should be attained before pit is considered operational. As written this subsection's intent isn't clear. Is seeding all that is required? During reclamation only?

> 21.4. A pit or impoundment that is constructed in such a manner that it (a) Rises twenty-five (25) feet or more above the natural bed of a stream or watercourse as measured from the downstream toe of the embankment and does or can impound fifteen (15) acre-feet or more of water; or (b) Rises six (6) feet or more above the natural bed of a stream or watercourse as measured from the downstream toe of the embankment and does or can impound fifty (50) acre-feet or more of water is, by definition, a dam and is thereby subject to the provisions of the West Virginia Dam Control Act, W. Va. Code §22-14-1, et seq.

This requirement, and the one in 21.5, doesn't make sense to us unless it is permitting the use of existing streams or ponds as pits. That practice should be utterly disallowed. If the structures are temporary and for dewatering, that should be stated explicitly. We believe that dewatering from a stream, river, pond or lake should require a separate permit. A dewatering permit would allow the state to have better control and have knowledge of industry's use of the waters of the state.

> 21.6.b. All pits and impoundments containing fluid must be inspected every three (3) days for the life of the pit or impoundment. Such inspection must be conducted by a company representative experienced in pit and impoundment construction. A company official shall certify to the Office monthly that the inspections have been conducted. If an inspection discloses a potential hazard, the company shall promptly inform the Office of the findings and of the emergency procedures formulated for public protection and remedial action.

Inspection requirement that appears in this subsection is sensible and should be required for all pits. We would add a requirement for special

inspections after significant rainfall events (e.g., 1 inch or more rainfall in 24-hour period). As noted below, our *Draft Recommendations* have inspection requirements for all pits, scheduled according to the size of the pit.

We would add the following particulars to the regulation or create wording in the regulation to support these particulars in a permit:

Distances for surface water

The location of a pit near a body of surface water should be regulated. New Mexico requires a distance of 300 feet from a river.[7] Our *Draft Recommendations* (page 28 in Appendix 3) offers suggested distances from types of water bodies. These are based in part on New Mexico's regulations but it should be mentioned that those in the Arkansas land application permit are a shorter distance.[8]

Distances for ground water

There needs to be a stated distance between the bottom of a pit and seasonally high ground water. The Argonne National Laboratory recommends a minimum of 5 feet between the bottom of the pit and seasonally high water level.[9] British Columbia requires a minimum of 1 meter.[10] New Mexico in its recently updated regulations requires the distance be at least 50 feet.[11] We believe the state, at a minimum, should follow the International Finance Corporation's guideline of at least 15 feet between the bottom of the pit and seasonally high ground water.[12]

There also need to be distances created for the pit in relation to groundwater used as domestic or municipal water supply.[13] In Texas, water wells within 1 mile of a pit need to be recorded in the permit, as does the

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[7] New Mexico, *New Mexico Code and State Rules for Oil and Gas*, rule 19.15.17.10.A(b).
[8] Arkansas Department of Environmental Quality, 2008, *Authorization to Land Apply Drilling Fluids Under the Provisions of the Arkansas Water and Pollution Control Act (Act 472 of 1949, as Amended, A.C.A. §8-4-101, et seq.), and A.C.A. §8-1-201, et seq.*, part II, page 2.
[9] Argonne National Laboratory, *Fact Sheet - Onsite Burial (Pits, Landfills). Drilling Waste Management.*
[10] British Columbia Oil and Gas Commission, *British Columbia Oil and Gas Handbook*, Chapter 10, Drilling Waste Management, page 5.
[11] New Mexico, 2008, *New Mexico Code and State Rules for Oil and Gas* and also *Highlights of the "Pit Rule" -- 19.15.17 NMAC*, rule 19.15.17.10.A.
[12] International Finance Corporation, 2007, *Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development*, page 8.
[13] Distances should also be determined for surface water that serves as domestic or municipal water supply.

depth of the shallowest freshwater for those wells.[14] Arkansas has similar requirements in its permit for landspraying.[15] We believe that a pit should be no closer than 500 feet to a private water supply (either surface or ground). The distance between a pit and municipal water supply or intake should be much further.

Distances for buildings used by persons

There is a limit in this state (unless waived in writing) prohibiting a well being within 200 feet of a residence. There is no limit for pits, which can be closer. The Federal Housing Administration in *Handbook 4150.2* states that dwellings, in order to receive mortgage insurance, need to be no closer than 300 feet of the edge of the well site.[16] We believe that wording such as this should be included in the regulation or a stated distance, such as no closer than 500 feet to a building used by persons.

Liner installation requirements

Our *Draft Recommendations* (page 30 in Appendix 3) offers extensive descriptive permitting or regulatory wording for pit liners and their installation. We believe that a 20 mil LLDPE geomembrane liner should be the minimum required for a temporary pit (the most common type of pit). A permanent pit should have 2 liners and leak detection system. That type of pit's liner should be 30 mil flexible PVC or 60 mil HDPE as a minimum. There are a number of descriptions of leak detection systems available; we used that found in New Mexico's Rules.

Proper installation of pit liners is crucial. Smaller pits may be able to use single piece liners. Larger pits will need to have liner segments joined by seam wedge welding. We believe a 6 inch overlap with dual seams tested according to ASTM D 5820 (Standard Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes) is necessary. We also believe that requirements as to how seams are placed according to slope (up and down, not along slopes) should be stated, as should the minimum distance from the toe of a slope to a liner seam (5 feet).

Installation requires a trench (we believe an 18 inch V-shaped trench is best) with at least 2 feet between inner edge of anchor and pit slope. Improperly anchored liners or liners with inadequate levee bank will fail. We

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[14] Railroad Commission of Texas, *Surface Waste Management Manual, Chapter 4, Pits.*

[15] Arkansas Department of Environmental Quality, 2008, *Authorization to Land Apply.*

[16] "No existing dwelling may be located closer than 300 feet from an active or planned drilling site. Note that this applies to the site boundary, not to the actual well site" (2.2.D.1). Department of Housing and Urban Development, 1999, *Changes to Handbook 4150.2, Valuation Analysis for Single Family One- to Four-Unit Dwellings.* Chapter 2: Site Analysis.

believe the OOG should have drawings available online for how liners should be anchored and showing levee bank width. There are companies that install liners and perhaps the OOG should keep a list, for operators, of those who do good work. Liners and their proper installation require a handbook prepared by the state.

Stormwater requirements

The anchor trench for the liner should not be used as part of the stormwater drainage system. Stormwater requirements should be well-stated in regulations, permit and OOG BMP publications. Stockpiles of chemicals should be elevated on skids set on liner material and surrounded with a dike. Liner material should be used under the rig if necessary to help keep contaminants from reaching the pad and being washed by rainwater off the pad.

Inspection

We believe all pits should have a required schedule of inspections. In section 4 of our *Draft Recommendations* (page 32 in Appendix 3) we require pits holding more than 5,000 barrels to be inspected once a day while they hold fluid. Pits without fluid can be inspected once a week.

Smaller pits can be inspected less frequently. A pit with less than 2,500 barrels should be inspected at least once a week. A pit with 2,500 to 4,999 barrels capacity should be inspected at least twice a week. Again, these inspections are to take place while there is fluid in the pit.

All pits should be inspected immediately after an unusual rainfall event (e.g., 1 inch or more in 24 hours).

Besides the necessity to inspect for proper freeboard, condition of the pit and liner, pits should be inspected to make sure they are not a source of wildlife death. The OOG should be contacted according to stated requirements when the pit structure is breached or broken or if there is wildlife death.

Monument and deed notice

If drill waste is buried, we believe the pit should have a permanent marker and a deed notice be filed in order to not disadvantage current or future surface or property owners. The Federal Housing Administration will

not insure a mortgage if there is a possibility that the house is, or will be, sited on or near a pit.[17]

Our *Draft Recommendations* in section 5.1 (page 33 in Appendix 3) gives the requirements for a marker and deed notice that we feel is necessary.

[17] "If a property is proposed near an active or abandoned well, call for a survey to locate the pits and their impact on the subject property" (2.2.E). Department of Housing and Urban Development, 1999.

Part Two

Comments on other sections of the regulation

4.2 Definitions

A definition of the waters of the state is badly needed for this regulation, the General Permit and for any other publication or rule pertaining to oil and gas. Our suggested definition reads as follows:

> "Waters of the state" shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state.[18]

4.5 Permits

We believe a separate permit should be required for each pit or impoundment constructed in the state. This would not prevent a pit being used for multiple wells. A pit permit would be a good vehicle to provide more particular construction, operation, closure and reclamation requirements. We believe a permit would be easier to update or alter than a regulation. With rapidly evolving technological changes in the regulated industry, this flexibility is necessary.

While we believe that each pit in this state should require a permit, we realize that in emergencies, a permit would not be possible. In section 6 of our *Draft Recommendations* (page 34 in Appendix 3) we provide what we believe are realistic requirements for emergency pits.

4.5.5 Identification Markings

We've found that about a third of the wells we've examined do not meet the requirement in this regulation that all operational and plugged wells have API numbers.[19] Complaints to the OOG have resulted in no action by companies to comply.

If non-adherence to this rule is a violation as stated in 35CSR4.5.6, the OOG needs to treat it as such. We have to believe if we find a large number

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[18] This wording is taken from Arkansas Department of Environmental Quality, 2008, *Authorization to Construct, Operate and Close the Pits Associated with Oil and Gas Well Exploration*, part I, page 4.

[19] George Monk and Molly Schaffnit, 2009, *Gas Well Study, 2008*. Examination of more wells by different companies in 2009 shows the same problem percentage.

of wells without API numbers or with tanks without required secondary containment that all operators are disregarding all regulations.

4.9 Form and Contents of Plats

We realize the purpose of the plat is to protect mineral owners and well operators. We believe that should not be the only purpose. Maps that are part of the well permit, or, as proposed by us, a pit permit, should indicate surface water presence and ground water depth within a specified distance from the well. Arkansas and Texas require within a mile, including the listing of all water wells and depths of ground water.

The USGS 7.5 quadrangles don't show enough detail of types of surface water that should be protected, such as ephemeral and intermittent streams. A proper permit map would require a study of the site's environs before application is made. A requirement that all pits be certified by a Professional Engineer would help make the application for a permit process less a slapdash affair.[20]

There is no requirement for a minimum distance from a municipal water supply such as 2,500 feet from a well, pit or land application area. Such as distance should also be determined for buildings used by people and for domestic water supplies. The current distance of 200 feet to a residence from a well is completely inadequate considering the size of drill sites with multiple horizontal wells.

We approve of 35 CSR 4.9.2.i and the requirement of UTM.

4.12 Well Records

Well records submitted to the state should include copies of MSDS sheets for drilling and fracturing additives. The state should have a database of chemicals that are being used by the oil and gas industry that could negatively affect surface and ground water or the health and safety of persons.

4.16 Reclamation

Reclamation details for site, road and pit need to be set out in detail. We've found a lack of understanding of the very basic requirements set forth in the Field Manual.[21] Over three-quarters of the roads we've examined are

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[20] The permit application for 47-103-02364-H in Wetzel County includes, as part of the proposed drilling program, inappropriate drawing and specifications for a different well in Roane County.

[21] George Monk and Molly Schaffnit, 2009, *Gas Well Study, 2008.*

bad by any reasonable standard and we find the Field Manual's sedimentation controls are being used at only a few sites. The few sites that do adhere and follow the Field Manual are in stark contrast to the norm operated by industry in this state.[22]

For example, sites should be seeded immediately after construction, for part or whole, within a set period of time such as a week. Where surface disturbance occurs, the area needs to be reseeded within a set period, such as a week. The lack of this requirement leads to erosion and sedimentation problems. Seeding should be done so as to achieve quantifiable cover, such as 70%, within a stipulated period.

4.17 Preventing Waste

Pollution can occur through contamination of soil with dry or wet chemicals or because of improper or inadequate stormwater drainage. A broadly worded requirement to follow state's published BMP guidelines would be an improvement as long as the guidelines are published and thorough. Regulations are not enough. The state needs to create standards and manuals for better guidance. Illinois provides a good example.[23] Other examples are Texas and New Mexico.[24]

4.19.3 Water Sampling and Analysis

Laboratory analysis should be furnished to the state (for water testing done before and after drilling) so that the state can either make the information public or create its own publicly accessible database with date, location, constituents and concentrations, and reported depth of groundwater. This information would be useful for the industry, especially if a description of groundwater depth within a set distance (such as a mile of the well) is made a requirement for drilling, pit or land application permit.

We believe that methane should be a required analysis since contamination of ground water by methane and other pollutants has been

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[22] 47-079-00746 is an example of an excellent site. 47-079-01492 is an example of a bad site.

[23] Illinois Environmental Protection Agency. *Best Management Practices for Oil Exploration and Extraction.* Illinois Environmental Protection Agency website.

[24] New Mexico's Oil Conservation District's *Pollution Prevention Best Management Practices for the New Mexico Oil & Gas Industry*, published in 2000, and Texas Railroad Commission's waste minimization publications and website, http://www.rrc.state.tx.us, are equally worthwhile looking at. For example their *Waste Minimization in Drilling Operations* web page: http://www.rrc.state.tx.us/forms/publications/wasteminmanual/wastemindrillingops.php.

found to be a common occurrence due to faulty industry practices.[25] Methane is a public hazard in private water supplies and has resulted in well and home explosions.[26]

Conclusions

We believe that input from the community should have been requested before changes in the regulation were attempted. The regulation as it stands shows a piecemeal and ineffective approach in protecting the environment and safety of the state's residents during the activities of the oil and gas industry.

We realize a too closely worded regulation can lead to unintended results, but the current oil and gas regulations in this state are too vaguely worded when it comes to protection of waters of the state, environment, wildlife, and safety of residents. The same vagueness is not found when it comes to coal and other mineral interests. It's time to put the state's environment and citizens on an equal footing with mineral owners.

While more careful wording in a permit could be the DEP's desire, a proper basis in regulation is necessary or the permit has no standing.

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[25] Geoffrey Thyne, 2008, *Review of Phase II Hydrogeologic Study Prepared for Garfield County,* and Geoffrey Thyne, [2008], *Summary of PI and PII Hydrogeologic Characterization Studies – Mamm Creek Area, Garfield County, Colorado.*

[26] Ohio Department of Natural Resources, 2008, *Division of Mineral Resources Management Report Conclusions about the Causation of the Aquifer Gas Invasion and Home Explosion Bainbridge Township, Geauga County.* A similar explosion of a well house occurred in Dimmock, Pennsylvania this year in an area affected by Cabot Oil and Gas Corporation drilling.

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Appendix 1

The Pits section from our *Comments for the Total Dissolved Solids Water Standards Criteria* (July 2009)

Pits[27]

There is a wide range of problems related to pits that are due to lack of regulation or permitting. The current triad of General Permit, regulation, and *Erosion and Sediment Control Field Manual*[28] (hereafter called Field Manual) has serious flaws.

Problems with the state's regulations occur in these areas: no limitation of pit location in respect to ground water; no limitation of placement of pit on site (fill area) or near surface water; no specifications for proper liner and installation/welding; no technique for proper encapsulation of solid waste and cover requirements; and finally, no placement of permanent marker and deed notice to comply with Federal Housing Administration requirements[29] for future builders and homeowners. The state's policies do not protect the environment or the health and welfare of its citizens.

Groundwater

While the state's regulations make offhand requirements to protect the waters of the state, there is no minimum distance between the bottom of the pit and ground water. The Argonne National Laboratory recommends a minimum of 5 feet between the bottom of the pit and seasonal high water level.[30] British Columbia requires a minimum of 1 meter.[31] New Mexico in its recently updated regulations requires the distance be at least 50 feet.[32] We believe the state should at a minimum adopt the Argonne National

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[27] The section on pits uses material that previously appeared in our blog. George Monk, 2009, *Pits.*

[28] West Virginia Division of Environmental Protection, 1992, *Erosion and Sediment Control Field Manual.*

[29] Department of Housing and Urban Development, 1999, *Changes to Handbook 4150.2, Valuation Analysis for Single Family One- to Four-Unit Dwellings.* Chapter 2: Site Analysis, 2.2.E.

[30] Argonne National Laboratory, *Fact Sheet - Onsite Burial (Pits, Landfills). Drilling Waste Management.*

[31] British Columbia Oil and Gas Commission, *British Columbia Oil and Gas Handbook,* Chapter 10, Drilling Waste Management, page 5.

[32] New Mexico, 2008, *New Mexico Code and State Rules for Oil and Gas* and also *Highlights of the "Pit Rule" -- 19.15.17 NMAC,* rule 19.15.17.10.A.

Laboratory's recommendation. A better choice would be at least 15 feet between the bottom of the pit and seasonably high ground water.[33]

Pit Location

The pit needs to be placed in firm soil. Sandy soils are not appropriate without amendment of some sort according to the Railroad Commission of Texas.[34] Fill soils are inappropriate and pits in fill soils need special written permission in British Columbia.[35] Placing a pit on the edge of the pad by the fill slope is not recommended by the Field Manual but we believe this is quite common. With pits increasing dramatically in size, the state needs to regulate or somehow control the use of fill soils.[36]

The pit needs to have the site constructed so that rain or other water is directed away from the pit (with berm and/or ditch). The General Permit actually sanctions the directing of stormwater into the pit (G15). Overflow of the pit because of improper stormwater drainage causes contamination of soils, ground and surface water. The freeboard needs to be a stated amount (New Mexico and Arkansas require 2 feet freeboard).[37]

The location of a pit near a body of surface water should be regulated. New Mexico requires a distance of 300 feet from a river (other distances are regulated in New Mexico, such as 500 feet from a domestic water source).[38] In Texas, water wells within 1 mile of a pit need to be recorded in the permit, as does the depth of the shallowest freshwater for those wells.[39] Arkansas has similar requirements in its permit for landspraying.[40]

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[33] International Finance Corporation, 2007, *Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development*, page 8.

[34] Railroad Commission of Texas, *Surface Waste Management Manual, Chapter 4, Pits.*

[35] British Columbia Oil and Gas Commission, *British Columbia Oil and Gas Handbook*, page 5.

[36] The state recently created a Memorandum for the oil and gas industry related to pits which partially addresses the issue of fill soils. The Memorandum does not proscribe the use of fill soils for large volume pits. West Virginia Department of Environmental Protection, 2008, *Memorandum: Large Volume Pits/Ponds (Capacity Greater than 5000 bbl.).*

[37] New Mexico, *New Mexico Code and State Rules for Oil and Gas* and Arkansas Department of Environmental Quality, 2008, *Authorization to Construct, Operate and Close the Pits Associated with Oil and Gas Well Exploration*, part II, page 2. Hereafter cited as Pit Permit.

[38] New Mexico, *New Mexico Code and State Rules for Oil and Gas*, rules 19.15.17.10.A(b) and (d).

[39] Railroad Commission of Texas, *Surface Waste Management Manual, Chapter 4, Pits.*

[40] Arkansas Department of Environmental Quality, 2008, *Authorization to Land Apply Drilling Fluids Under the Provisions of the Arkansas Water and Pollution Control Act (Act 472 of 1949, as Amended, A.C.A. §8-4-101, et seq.), and A.C.A. §8-1-201, et seq.*, hereafter cited as Authorization to Land Apply.

Pit Liners

Pit liners are optional for this state but we believe are commonly used. Liners should always be required. The state has no specifications for liners which are available in a variety of materials and thicknesses.[41] The state also has no requirements for locations of seams (up and down slopes, not laterally, for instance) or installation (type and depth of anchor trench). We believe that New Mexico's regulations could easily be adapted.[42]

Burial and Cover

Before burial, the solids at the bottom of the pit are encapsulated (though West Virginia doesn't require encapsulation; open liners and contents can be buried shallowly). Basically, encapsulation means the pit liner's edges are folded over the solids preventing their escape. Soil cover over the burial cell is important since enough depth is required to prevent plant roots from disturbing the liner's integrity. The Argonne National Laboratory recommends at least 3 feet of cover.[43] We believe that more is required where the reclaimed surface will eventually revert to forest. Soil cover needs to be graded so that the surface doesn't allow the ponding of water. We believe the Argonne National Laboratory's recommendations should be incorporated in the state's regulations.

Permanent Marker

There needs to be a way to record the exact location of each pit in the state. In New Mexico this is done through a deed notice associated with the surface owner's property deed. New Mexico also requires a permanent marker much like that required in this state for plugged wells -- a steel monument 3 feet above the ground's surface.[44] Arkansas requires a separate pit permit and registration for each pit and the pit number(s) posted at the drill site (British Columbia has similar requirements).[45] New Mexico's regulations were written so as to not disadvantage surface owners at the present or in the future because of Federal Housing Administration requirements.[46] This state needs to do the same.

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[41] See George Monk, 2009, *Pit Liners.*

[42] New Mexico, *New Mexico Code and State Rules for Oil and Gas,* rule 19.15.17.11.F.

[43] Argonne National Laboratory, *Fact Sheet - Onsite Burial (Pits, Landfills). Drilling Waste Management.*

[44] New Mexico, *New Mexico Code and State Rules for Oil and Gas,* rule 19.15.17.13.F.

[45] Arkansas Department of Environmental Quality, 2008, Pit Permit, part I, page 4. British Columbia Oil and Gas Commission, *British Columbia Oil and Gas Handbook,* page 7.

[46] Department of Housing and Urban Development, 1999, *Changes to Handbook 4150.2, Valuation Analysis for Single Family One- to Four-Unit Dwellings.* Chapter 2: Site Analysis, 2.2.E.

An Example of a Problem Pit

We've begun documenting a well site (47-079-01492) that demonstrates the flaws in the state's program and the result. An *Interim Environmental Assessment* for the site appears as Appendix 2 to this document, but briefly what we've found was an inadequately closed and sited pit at this recently drilled site in Putnam County, above the Pocatalico River.[47] Water is running through the closed pit which we believe is due to its being sited on a spring or in a spring's drainage. Water was not observed traversing the pad to the area of the pit. Testing for chloride found a chain of connection between the pit area, the fill slope below the pit where drainage is visible, through a log and brush sediment barrier, onto a flat area where another, older, well is sited. High chloride was found in a drainage ditch on the flat and below. Because of mixing with other water from off the site, chloride at a lower (but still significant) concentration was found at the culvert inlet that drains to the Pocatalico River hundreds of feet from the pit.

If care had been taken in siting the pit in relation to ground and surface water and if the pit had been closed properly (there's insufficient cover and water ponds on the surface), we believe there would have been no pollution. Unless remediation is undertaken the pit can be expected to affect the river and ground water for a long period of time.

We should not be able to find any drilling related contaminant leaving a site if the operator is doing their job properly and if the state is giving good guidance.

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[47] George Monk and Molly Schaffnit, 2009, *Interim Environmental Assessment for 47-079-00731 and 47-079-1492, Putnam County, West Virginia.*

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Appendix 2

***Interim Environmental Assessment for 47-079-00731 and 47-079-01492, Putnam County, West Virginia* (June 2009)**

This site has two wells close together situated just above the Pocatalico River. 731 was drilled in the 1960s, 1492 is a new well completed in 2008 whose site has yet to be reclaimed.

There are a number of serious problems with the overall site including noncompliance with federal SPCC regulations (40 CFR 112) and state regulations and legislated code.

We began an examination of this site in November 2008 when the drill rig for 1492 was still on the pad. Our website has photographs and descriptions of site visits through April 2009.[48] In June 2009 we began sampling water and soil on the site. This interim report will discuss those findings.

We used low range (30 mg/l to 650 mg/l) Hach Quantab chloride test strips for testing. Water was tested directly at the site; soil samples were tested at home.

Twelve tests were made, 5 water and 7 soil. Samples were taken from the location of 1492's improperly sited and closed pit,[49] the fill slope below the pit, and in and below the log and brush sediment barrier at the base of the fill slope. Other samples were taken on the flat where 731 sits and at the ditch that drains this part of the site. The only off-site sample was gathered at a culvert inlet at the foot of the bank below 731. The culvert drains directly into the Pocatalico River and serves not just as drainage for part of the site but also the area to the east of the site.

Another culvert, to the west of the site, was not investigated. That culvert's drainage ditch at the base of the bank is blocked by sediment from the site.

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[48] Monk and Schaffnit, *Wells Operated by Various Companies, 47-079-0149* web page.

[49] The state doesn't give guidance on closure of waste pits. Internationally accepted guidelines such as International Finance Corporation's *Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development* require siting a pit's bottom at least 5 meters above ground water and closure includes at least a meter of soil cover contoured to prevent ponding of surface water. The state does require that reclamation "not cause an overflow and/or discharge of materials to waters of the state" (35 CSR 4.16.4.g).

Soil sample locations

ID	Description	Chloride
Pad and pit for 1492 partway up hillside		
S7	Soil sample from closed pit area in wet spot	>650 mg/l
Fill slope below pit		
S6	Soil sample from fill slope above log pile. Sample was from dry soil higher on fill slope than S3 and S1 and above S1.	<30 mg/l
S1	Soil sample from fill slope close to log pile. Sample was from drainage from pit.	285 mg/l
S3	Soil sample from fill slope close to log pile. Sample was from drainage from pit.	513 mg/l
Log and brush sediment barrier below fill slope		
S2	Soil sample from high in log pile above S4.	285 mg/l
S4	Soil sample in log pile above W4.	356 mg/l
W3	Water sample in log pile above W2.	>650 mg/l
Flat where 731 sits below log and brush sediment barrier		
W4	Water sample between log pile and ditch.	>650 mg/l
W2	Water sample from west of 731.	>650 mg/l
S5	Soil sample from disturbed soil above ditch.	192 mg/l
W1	Water sample from ditch near 731.	595 mg/l
Culvert inlet at base of bank below flat		
W5	Water sample from culvert inlet. Culvert drains to Pocatalico River.	57 mg/l
Note: Samples taken from surface.		

Water could be seen entering the site of the closed pit but it could not be seen crossing the pad's surface between the location of the pit and the cut slope. On the fill slope below the pit there were clear signs of drainage from the pit area but the amount of water didn't seem to match the larger quantity coming through the log and brush pile at various points. Soil sample S6 was taken part way up the fill slope away from obvious drainage. This was the only sample that had low chloride (<30 mg/l).

A greater understanding of the site's hydrology needs to be gained and more tests done in different parts of the site to make a firm assessment but the data we have at this point indicates that contaminated water is entering the Pocatalico River. The source of contamination seems to be the closed drill waste pit. While our tests are for chloride, produced water or pit waste solids normally also have elevated concentrations of heavy metals such as lead and arsenic, high concentration of sodium, and may also have hydrocarbons and naturally occurring radioactive material.

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(Revised July 2009)

Appendix 3

Waste Pits, Draft Recommendations for Pit Regulations

Notes:
Siting Section distances (2.001-2.005) are suggestions only offered to encourage debate on this topic. Just how close should a pit be to dwellings and water? Soil consideration is mentioned in 2.005 but just how specific and what special soils require special regulation is open for discussion.

3.1 Temporary and Permanent Pit Construction are based on distinctions in New Mexico's pit regulations. I wonder if large volume pits (5,000 barrels or more) shouldn't have stricter lining requirements even though they are temporary pits -- say 30 HDPE single liner.

Testing criteria in 5.003 is for pit solids. It's assumed that if liquids for landspraying meet requirements, then solids will also. For pits with liquids not disposed of by landspraying, testing probably should meet major criteria for landspraying: chloride, metals and hydrocarbons/organics. One way to write this requirement in 5.003 would be to use same testing as for landspraying. Since there is no current valid landspraying criteria for this state (the state's current criteria are open to serious criticism) I've offered what's shown here. Again, this provides a point for discussion.

1 Special Permit

1. 001 A permit is required for each pit. A pit permit can be part of an application to drill or be made separately. A pit permit is not a disposal permit by land application (landspraying) which is a separate permit. A general permit cannot be used for pits holding over 5,000 barrels.

1.002 A pit must be constructed, maintained, and closed according to the principles in this permit or alternative principles allowed by the Office. In either case, the pit permit application must be prepared by a professional engineer.

1.003 Operating and maintenance procedures in the permit are minimum acceptable standards.

1.004 The closure plan must include details of how pit contents are to be disposed. Landspraying requires a separate permit.

1.005 Hydrogeologic data must be provided for each pit application. This data includes maps for soil and surface and ground water described in 2 Siting.

1.006 The size of the pit (length and width) in addition to the fluid depth is required for a pit permit.

1.007 The exact location of the pit's centerpoint is required (longitude and latitude).

1.008 Pit's use must be indicated in the permit, whether for water storage, freshwater mud, oil-based mud, produced water/oil, etc.

1.009 A pit whose contents are to be landsprayed cannot receive fracturing flowback or unused fracturing acid or materials.

2. Siting

2.001 A pit can be no closer than 500 feet to a building used by persons, such as a dwelling or business. Note that border of land application, if permitted as a disposal option, must also be at least 500 feet from a dwelling or business.

2.002 A pit can be no closer than 500 feet from a building used by groups of persons such as a church, school or large business/factory. Land application area border, in this instance, must be at least 1,000 feet from such a building.

2.003 A pit can be no closer than 300 feet from perennial and intermittent streams and rivers, lakes or ponds (as indicated on U.S. Geological Survey 7.5 quadrangle).

2.004 A pit can be no closer than 150 feet from ephemeral and intermittent streams not shown on 7.5 quadrangle but appearing in hydrogeologic survey.

2.005 A pit can be no closer than 500 feet from a wetland (as appearing on 7.5 quadrangle).

2.006 A pit can be no closer than 500 feet from a private domestic water source (used by 5 families or less), whether well or spring. A pit can be no closer than 1,000 feet from other drinking water sources (6 families or more), except in the case of municipal water source.

2.007 A pit can be no closer than 2,500 feet from a municipal water source, whether it be a wellfield or surface water body.

2.008 A pit's bottom can be no closer than 15 feet from the seasonally high water table. In certain soils, such as karst, the distance is 50 feet, and a specially engineered pit with 40 mil HDPE liner or better is required.

2.009 Pit application will include the following maps:

2.0091 Detail of location on 7.5 quadrangle showing contour lines.

2.0092 Map of 1 mile radius indicating intermittent and perennial streams and rivers, lakes and ponds, and ephemeral streams and wetlands. Also indicated on this map will be locations of all domestic and municipal water sources and depth of ground water.

2.0093 Soil map from the National Resource Conservation Service showing location of pit and, if applicable, land application area.

3 General Pit Design and Construction

3.001 Topsoil will be saved during pit construction to be used as final cover during reclamation.

3.002 Each pit will have a sign indicating Office assigned pit number, well name and API number, operator name and emergency numbers for operator and Office. The sign will also include the location (longitude and latitude).

3.003 Each pit will be fenced with a substantial fence to prevent access by persons and wildlife to the pit.

3.1 Temporary Pit and Permanent Pit Construction

3.101 A pit can only be constructed in undisturbed soil. A pit that is to be constructed in fill soil or on edge of fill slope must have specifications for construction prepared by professional engineer and approval in writing by the Office. A pit which will hold 5,000 barrels or more will not be exempted.

3.102 Pit slope will be no steeper than 2:1 (2rise:1run).

3.103 The excavated surface for the pit will be as smooth as possible with no rocks, tree limbs or roots, that can pierce the lining. It may be necessary to use sand or geotextile as underlayment for liner.

3.104 Excavated pit will have surface compacted by roller or other means before liner is installed.

3.105 A temporary pit means a pit, including a drilling or workover pit, which is constructed with the intent that the pit will hold liquids for less than 6 months and will be closed in less than 1 year.

3.2 Pit Liner

3.201 All pits will be lined with an appropriate liner or better.

3.202 Liner for temporary pit will be geomembrane liner 20-mil string reinforced LLDPE or equivalent material (impervious synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions and resistant to ultraviolet light). Liner compatibility will comply with EPA SW-846 method 9090A.

3.203 Liner for permanent pit two liners with leak detection system (leak detection system and requirements for welding seams described below). The liners to be 30-mil flexible PVC or 60-mil HDPE or equivalent. The liner should have a hydraulic conductivity no greater than 1x10-9 cm/sec. The impervious synthetic material will be resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions and also be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A. The operator will place a leak detection system between the upper and lower geomembrane liners that consists of two feet of compacted soil with a saturated hydraulic conductivity of 1 x 10-5 cm/sec or greater to facilitate drainage. The leak detection system will consist of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped to facilitate the earliest possible leak detection. Piping used will be designed to withstand chemical attack from oil field waste or leachate; structural loading from stresses and disturbances from overlying oil field waste, cover materials, equipment operation or expansion or contraction; and to facilitate clean-out maintenance. The material the operator places between the pipes and laterals will be sufficiently permeable to allow the transport of fluids to the drainage pipe. The slope of the interior sub-grade and of drainage lines and laterals will be at least a two percent grade, i.e., two feet vertical drop per 100

horizontal feet. The piping collection system will be comprised of solid and perforated pipe having a minimum diameter of four inches and a minimum wall thickness of schedule 80. The operator will seal a solid sidewall riser pipe to convey collected fluids to a collection, observation and disposal system located outside the permanent pit's perimeter. The operator may install alternative methods that the Office approves.

3.204 Liner seams will traverse pit slopes, up and down, rather than along slope. No seam will be within and along 5 feet of toe of slope.

3.205 Liner seams will be wedge welded with 6 inch overlap with dual seams for testing. The operator will test a seam by establishing an air pressure between 33 and 37 psi in the pocket and monitoring that the pressure does not change by more than one percent during five minutes after the pressure source is shut off from the pocket. Alternative standard for steam testing is current ASTM D 5820 (Standard Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes). Prior to field seaming, the operator will overlap liners six inches and orient seams parallel to the line of maximum slope, i.e., oriented across, not along, the slope. The operator will minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel will perform field seaming. Pit will not be used unless all seams pass testing.

3.206 Liner will be anchored in an 18 inch deep v-shaped trench, filling trench entirely before compacted soil is used as anchor.

3.207 Pit wall bank (or levee) must be at least 24 inches between inner edge of anchor and pit slope.

3.208 Drawings showing proper welded seam and anchor trench details may be downloaded from Office website.

3.3 Stormwater

3.301 Stormwater and other water from the surface of the pad or environs must be kept from the pit.

3.302 Pit must have 2 feet freeboard at all times.

3.303 The V-shaped trench for anchoring the liner is not to be used as the ditch to keep stormwater from the pit. The bank (or levee) for a pit can act as a berm to prevent stormwater access to the pit, but a ditch is also required.

4. Operational Requirements

4.001 A pit with less than 2,500 barrels must be inspected at least once a week with an additional inspection immediately after a major storm or rain event (1 inch of rain or more).

4.002 A pit with 2,500 barrels to 4,999 barrels must be inspected at least twice a week with an addition inspection immediately after a major storm or rain event (1 inch of rain or more).

4.003 Pits with more than 5,000 barrels must be inspected once a day.

4.004 Inspections are to take place while pits have fluid. Pits with fluid removed, before closure, must be inspected once a week.

4.005 Office must be notified immediately when pit structure is damaged or breached or liner is broken.

4.006 Office must be notified within 5 days if there's been wildlife death.

4.007 If inspection determines inadequate freeboard, an emergency, temporary, pit may be constructed. See 6 Emergency Pits

4.008 If inspection determines instability of pit walls or structure or damage to liner, the office will be contacted in 24 hours with engineering proposal to repair instability or intent to repair liner. Freeboard must be maintained at all times.

5 Closure

5.001 Closure of pit will take place within 3 months of drill rig leaving site, or otherwise required by Office.

5.002 Closure will take place after fluids have been removed from pit.

5.003 If pit was used for other than freshwater mud or water storage, solids in pit, before burial, will meet the following maximum concentrations:

pH, range	6-9
Benzene, no more than	0.2 mg/kg
Total BTEX, no more than	50 mg/kg

TPH, no more than	2,500 mg/kg
Chloride, no more than	3,000 mg/kg
GRO & DRO Combined fraction	500 mg/kg
Arsenic, no more than	10 mg/kg
Barium, no more than	750 mg/kg
Cadmium, no more than	3 mg/kg
Chromium, no more than	500 mg/kg
Lead, no more than	300 mg/kg
Mercury, no more than	0.8 mg/kg
Selenium, no more than	2 mg/kg

5.004 Closure entails either removal of solids and liner for proper disposal elsewhere or, when pit meets landspraying permit requirements or requirements in 5.003 above, burial of solids.

5.005 If solids are to remain in pit, they are to be enclosed in liner as a wrapped cell and another element of appropriate geomembrane liner will be used to cover the cell.

5.006 Cell is to be buried with at least 3 feet of cover, 4 feet if area is expected to revert to forest.

5.007 After closure, topsoil is reapplied and surface given a final grading so that it is contoured to shed water. Surface ponding is unacceptable.

5.008 Permanent seed must achieve 70% coverage (70% of previous coverage; forest is considered 100%) within 24 months. Reseeding and/or nutrient support will be required until site meets 70% standard.

5.1 Marker

5.101 A pit with encapsulated cell must have a permanent marker. The marker will be a steel pipe, set in cement 3 feet below the surface, extending 3 feet above the surface with the well's API number and pit number permanently affixed so that these numbers are easily seen. The marker will be set in the center of the pit, the geographic location noted on the permit application.

5.102 A deed notice for the location of the pit will be recorded in the appropriate county or counties' deed office, associating the pit, with its location, and the deed of the surface or property owner.

6 Emergency Pit

6.001 An emergency pit, after notice is given to the Office, can be constructed without a permit.

6.002 The purpose of the emergency pit will be to provide temporary freeboard to permitted pit, whether in the case of an unusual storm event or failure of all or part of the permitted pits' structure or liner.

6.003 An emergency pit is temporary and, if unlined, contaminated soil must be disposed of properly off site. Soil disposal will not be required in the case of a fresh water storage pit.

WEST VIRGINIA RIVERS COALITION

329 Davis Avenue, Suite 7 • Elkins, WV 26241 • (304) 637-7201 • www.wvrivers.org

July 13, 2009

James Martin
Chief, Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304-2345

Re: Comments on Rule 35CSR4 Oil and Gas Well Rules and Other Wells

The undersigned would like to applaud the amendments and additions proposed to Legislative Rule 35CSR4, particularly in respect to the protection of freshwater water resources throughout the drilling process, and steps taken to provide for more responsible reclamation. We are particularly pleased that section 16.4.d requires all pits and impoundments to have a synthetic liner, and we fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels."

However, we urge the WVDEP to further strengthen this rule to more fully protect public health and the environment, and we expand on these comments below.

GENERAL COMMENTS

Changes to well drilling rules of WVDEP's Office of Oil and Gas are immensely important. It has been more than 25 years since any significant changes were made to West Virginia's drilling rules. The state's regulation of oil and gas well drilling already has many problems, and new exploration using new processes, such as horizontal drilling and large volume fracturing, is creating new kinds of problems that need to be addressed as well as the additional resources that will be needed to address them.

The West Virginia Legislature has vested in the WVDEP the authority "to use all practicable means and measures to prevent or eliminate harm to the environment." In light of this authority, it is clearly the responsibility of WVDEP to consider the cumulative impacts of oil and gas well drilling on the environment including land, air, surface water and ground water resources. A successful state regulatory program must include constant review and revision of that regulatory program. The increased drilling in West Virginia, both in numbers of wells drilled and in the size and scope of those operations, necessitates the WVDEP to re-examine the capability of its regulatory program to carry out its primary protectionary function.

Due to the inadequacies of the current regulatory program, WVDEP is in the position of lacking both the funds and the staff to adequately review, evaluate and issue permits, observe field activities and perform compliance monitoring. Currently, there are more than 45,000 active gas wells in West Virginia. The number of well work permits issued varies from 900 to 3,000 each

year. The drilling of new wells requires several visits by an inspector and each active well should be inspected at least once annually. Yet, West Virginia has a total of only 16 inspectors.

Funding issues begin when an application to drill a well is received. The permit fees are extremely low compared to what it costs to drill a well ($250,000 to $1 million). West Virginia's "blanket bond" provision allows a producer to put an unlimited number of wells under a $50,000 "blanket bond." That "blanket bond" is intended to cover the plugging costs of wells if the operator abandons the operation. It costs $8,000 or $10,000 or more to plug a well at the end of its useful life in order to prevent contamination of groundwater and other mineral resources. Is there any wonder that there are 10,000 wells that need to be plugged that are not being plugged?

Now come the new wells being drilled to the Marcellus Shale formation using new "slickwater" and other fracing techniques. These wells represent a huge leap in technology, and cause an exponential increase in surface disturbance, water use and waste disposal, and so pose a serious threat to our land and water resources:

- There will be an extensive number of the new Marcellus Shale wells. Some drillers have asked for, and received, permission from the Oil and Gas Conservation Commission to drill these wells as close as 1,000 feet from each other on the first half-million target acres of land in West Virginia – that would be a well on every 40 acres of land in West Virginia. They state they have 1,700 locations already pre-planned.

- Instead of a one or two acre drilling site on the surface, Marcellus Shale wells require five acres or more, possibly on every 40 acres.

- The bulldozed access roads will have 300 to 500 vehicle passes during the drilling phase alone, and many of those will be heavy tractor trailer loads. There is no requirement to gravel the roads even in the worst weather.

- Horizontal drilling techniques are even newer than "slickwater" fracing techniques. One horizontal well can in some places, be drilled instead of several vertical wells. Also, several horizontal wells can be drilled on a single well site. Using horizontal wells where they can be drilled would eliminate the need for many well sites and access roads and greatly reduce the risk of groundwater and surface water contamination that occurs at the beginning of the drilling of any well. However, West Virginia has no way to require developmental Marcellus Shale wells to be drilled horizontally instead of vertically where horizontal wells can be drilled.

- The fracing of a conventional shallow gas well requires less than 210,000 gallons of water. The new fracing techniques that make the drilling of Marcellus Shale wells possible require at least an Olympic swimming pool size impoundment of water. Vertically drilled Marcellus wells require at least 600,000 gallons of water with chemical additives, while horizontally drilled wells require up to three million gallons of water or more. New regulations are needed for the impoundments that contain these fluids, as the proposed rule recognizes.

- West Virginia has insufficient regulation for water withdrawals from streams, rivers and wells. The additional quantities of water needed in new drilling techniques will require additional regulation to prevent de-watering of these valuable resources.

- West Virginia has no requirement for public disclosure of, let alone regulation of, the chemicals that can be put into the water pumped down the well that flows back up to the surface before or during the start-up of production.

- There is a recognized lack of approved underground injection wells and wastewater treatment disposal facilities capable of handling frac flow-back water and produced brine.

- West Virginia has insufficient data to understand the levels of salt and natural occurring radioactive materials (NORMs) from deep geological formations that are brought to the surface as the result of drilling and fracing a well. We would encourage additional sampling and research.

The proposed agency rule makes some changes in response to the drilling of new Marcellus Shale formation wells. However, it is the undersigned citizens' position that additional changes should be made, and existing rules desperately need to be improved. Our specific comments and proposals are below.

SPECIFIC SECTION COMMENTS

35CSR4 Oil and Gas Wells and Other Wells

§35-4-2. Definitions.

Section 2.18. should be added to read:

"Fracing" shall mean the process of forcing material into a well under pressure in order to fracture the rock or shale in order to release gas.

Section 2.19. should be added to read:

"Frac flow-back" shall mean any fluids flowing back from a well before the well is put into production that contains the materials used in fracing a well.

§35-4-11 Operational Criteria

General comments:

Many areas in the eastern counties of West Virginia have a karst geology. Drilling in karst presents special problems. Although measures are taken to prevent contamination of groundwater, drilling can disturb the circulation of water in successive layers of caves, and it can affect wells and springs further from the drilling than the [rule] recognizes as the responsibility of the driller. Where there is karst geology, study should be done before permitting.

Section 11.6. should be amended to read:

Annual Inspection - The operator shall conduct an inspection at the surface of each unplugged well at which drilling has been completed for more than five (5) years. Such an inspection shall be conducted no less frequently than once each calendar year in a method approved by the Chief. Certification of the performance of such inspection, in a form approved by the Chief, shall be filed with the Office of Oil and Gas in conjunction with the operator's annual report as required ~~under~~ by subsection 15.1 below. Should the operator detect evidence of any leakage or other indications of casing integrity failure, the operator shall give notice to the Office of Oil and Gas within 24 hours and take such measures as may be appropriate to eliminate the leakage. The district inspector shall verify within 5 days that the leakage has been eliminated. If the leakage has not been eliminated, the Chief shall order the well to be plugged.

§35-4-16. Reclamation

General comments:

Plugging operations are exempt from filing a full soil erosion and sediment control plan by W.Va. Code 22-6-6(d). The result has been that in some cases no re-seeding etc. is done at all. The operator should at least be required to show the state and the surface owner the instructions the operator should be giving to its employees or contractors for removing the well site and access road and reseeding/revegetating the land. The well site and access road should be removed unless one of the surface owners agrees that it not occur. If the road and site are to be left in place, only the proposed reseeding/revegetation should be included with the permit. The cost of plugging should be minimized in order to encourage plugging.

The construction and reclamation plan should show where the pipeline is going to go and how it is going to be reclaimed. This is not the case now. Surface owners are surprised when the bulldozer takes off in a new direction that was not designated in the well work application and the operator tells them for the first time that there is going to be a pipeline there.

Section 16.1.a. should be amended to read:

All proposed reclamation methods for construction of roads, drilling locations, pipelines, pits and impoundments, if any, or alternative overflow prevention facilities, shall be submitted on Form WW-9 with the application for any permit required by W. Va. Code §22-6-6, except a permit to plug a well. Form WW-9 shall include an estimate of the amount of acreage to be disturbed, the location of all pits at the drill site (with approximate dimensions of the drill site and pits), and the land application area if applicable. Drawings must be clear, concise and complete so that all parties understand the proposed activity. Such proposed reclamation methods shall be approved by the Chief or his designate prior to the issuance of the permit, and all reclamation shall be done under the supervision of the Chief. With the consent of this Chief or his designee, the reclamation may be altered from that set out in said Form WW-9, if found necessary due to topography or other conditions not apparent upon initial submission and approval of the proposed reclamation methods. Landowners shall be consulted prior to the approval of any alterations.

Section 16.1.b. should be added to read:

When plugging a well a full reclamation plan is not required. However the proposal for deconstruction of the site and access road shall be included with the permit application unless deconstruction of the well site or access road or both is waived in writing by an owner of the surface. The application for the plugging permit shall also contain proposed re-vegetation.

Section 16.2. and 16.3. Access road and drilling sites.

General comment:

The rule currently allows all but "excess" and "excessive" sedimentation in the streams below the sites and roads. Sedimentation should be nonexistent or minimized.

Section 16.2. should be amended to read:

Access Roads – All access roads shall be constructed and maintained so as to prevent ~~excess~~ sedimentation, maintain natural drainage areas and to direct or carry away from disturbed areas surface water run-off from undisturbed areas.

Section 16.3. should be amended to read

Drilling Sites – Drilling sites shall be constructed and maintained to prevent surface run-off carrying ~~excessive~~ sedimentation from the site, to confine all materials leaked or spilled as a result of drilling operations to the drilling site, and to prevent ~~excess~~ sedimentation by not placing in any stream any material moved or cut. Upon the plugging of a non-productive well, whether as a continuous operation with other permitted well work or otherwise, all cementing and other waste materials resulting therefrom shall be disposed of at a facility authorized to receive such material ~~retained on the drilling site~~.

16.4. Wastewater Pits and Freshwater Impoundments

General Comments:

We applaud that the Rule is finally amended to require liners of all pits and impoundments. This requirement is long overdue.

The driller should be required to take drilling pit liners and the pit waste contained in them at the end of drilling to a landfill instead of burying them on a surface owners' land and sterilizing the area from future construction and other uses. Under current rule, the operator is not even required to place a marker or monument to show where the pit waste has been buried.

The rule has no limitations on pit location with respect to ground or surface water. DEP should develop sitting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium.

Section 16.4.h. should be amended to read:

All ~~drilling~~ pits, impoundments, and alternative overflow prevention facilities shall be constructed, maintained and reclaimed so as not to be left in such condition as to constitute a hazard or to prevent use of the surface for ~~agricultural purposes~~ any use available prior to the well activity after the expiration of the six (6) month or extended period for reclamation prescribed by W. Va. Code §22-6-30. Following removal of all fluids, the remaining material and the liner shall be removed and disposed of through a facility approved for the receipt of those wastes. The reclamation period for pits and impoundments permitted with multiple wells shall be calculated from the date the last well was drilled.

Section 16.4.i.:

General comment:

For an increased level of safety, pits and impoundments should incorporate lifelines and perimeter fencing. Additionally, as these sites are likely to have additional equipment during the drilling and completion of the well, operators must plan for adequate spacing of equipment and access to all areas of the site to assist in creating a safe working area.

Section 16.4.i. should be added to read:

For increased safety, pits and impoundments must incorporate lifelines and perimeter fencing. The fence must be at least four (4) feet in height and exclude livestock. The Office may require the operator to meet additional fencing requirements for the protection of wildlife in particular areas.

Section 16.6. should be amended to read:

Notifications Prior to Commencement of Work – Prior to the construction of roads, locations, ~~and~~ pits, and impoundments for any permitted well work, the operator or his contractor shall notify the appropriate oil and gas inspector and allow the opportunity of inspecting and approving the construction and method of reclamation of all proposed areas to be disturbed in siting, drilling, completing or producing the well. In addition, the well operator or his contractor shall notify in writing the appropriate district oil and gas inspector twenty-four (24) hours before actual permitted well work is commenced. In addition, the operator shall give prior notice to the surface owner before construction of all pits and impoundments.

§35-4-19. Water Supply Testing

19.1. - Testing Obligations and Rights:

General comment:

The operator should be required to test all water wells within 1,000 feet of their proposed well site, as well as any springs within 1,000 feet that are being used for human consumption, domestic animals or other general use where testing has been requested by the surface owner(s)

or user(s).

19.1.a. should be amended to read:

~~At the request of the owners of record of the surface tract as defined in W. Va. Code §22-6-9 or an occupant of land within one thousand (1,000) feet of the proposed well, t~~The operator shall sample and analyze, in accordance with ~~this section~~ W. Va. Code §22-6-9, water from ~~any~~ all wells located within one thousand (1,000) feet of the proposed oil or gas well ~~or~~ and any springs located within one thousand (1,000) feet of the proposed well that is actually utilized by such owner or occupant for human consumption, domestic animals, or other general use.

19.3. - Sampling and Analysis

General comments:

In addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride), as well as any other constituents of Marcellus flow-back that may serve as indicators of water contamination. DEP data from flow-back samples from a Marcellus well contained high concentrations of several constituents, not just iron and chloride (data attached). However, fracturing, drilling, or even site preparation and road building activities could cause changes in groundwater flowpaths, recharge zones, or the fracture system feeding a water well. A more complete analysis of the constituents of the well water would allow both landowners and operators greater confidence in whether or not the quality of a well changed subsequent to drilling.

At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner. Increases in sodium concentration in water used for human consumption are of great concern. Especially in consideration of the high rates of heart disease and hypertension suffered by West Virginians, increases in sodium concentration in well water used for human consumption could be deadly.

§35-4-21. Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5,000) Barrels.

General comments:

DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit or impoundment failure.

Section 21.1. should be amended to read:

All pits and impoundments used in association with an oil and gas operation, whether permitted or not, shall be constructed only in locations appropriate for the storage of water, including wastewater, and shall be designed, constructed, located, maintained, and used in accordance with this rule and in such a manner as to eliminate adverse environmental impacts and to assure safety of the public. Notice of construction of all pits and impoundments shall be provided to the Office

and the surface owner prior to construction. Such notice shall identify the location and dimensions of the pit or impoundment. The Office shall have the authority for inspection of these sites and the enforcement of this rule.

21.6. Inspections

Section 21.6.b. should be amended to read:

All pits and impoundments containing fluid must be inspected every three (3) days for the life of the pit impoundment. Such inspection must be conducted by a company representative experienced in pit and impoundment construction. A company official shall certify to the Office monthly that the inspections have been conducted. If an inspection discloses a potential hazard, the company shall ~~promptly~~ inform the Office of the findings and of the emergency procedures formulated for public protection and remedial action immediately following the inspection, but no later than 24 hours following the inspection.

Section 22 should be added:

§35-4-22. Management of Fracing and Flow-back When Water Used for Fracing is Greater Than Five Thousand (5,000) Barrels.

General comments:

The rule should require disclosure of the chemicals that are placed in the frac water in a place available to the public. The industry already has to supply Material Safety Data Sheets for the chemicals it transports, but they are impossible to find without asking the truck drivers for them, and the truck drivers should not be responsible for that. It is our understanding that the exact chemicals are not trade secrets, just the mixtures. And in any case, trade secrets should yield to the importance of public and environmental safety.

The rule should regulate the chemicals that can be placed in the frac water in addition to requiring their disclosure.

The rule should require testing and disclosure of the flow back water and monitoring and reporting the volume that comes back up. Flow-back water may contain naturally occurring radioactive materials (NORMs) and increased levels of salt. But how much and of what characteristics? How can the agency protect the public without knowing?

The rule should regulate the disposal of the flow back. Fracturing jobs that require the injection of more than 5,000 barrels of fluid should be required to use a closed-loop system to capture the flow back and it should be transported to proper treatment facilities.

Section 22.1. should be added to read:

The contents of any materials used to frac a well shall be reported to the WVDEP and the surface owner prior to commencement of fracing. This information shall also be made available to the public upon request.

Section 22.2. should be added to read:

Flow back water should be tested and monitored for naturally occurring radioactive materials (NORMs).

Section 22.3. should be added to read:

A "closed loop" system shall be required for frac flow-back in such manner that the fluids are captured in holding tanks and transported to a facility approved for the receipt of those wastes.

Sincerely,

Shanda Minney
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The following amendments have been made to the rule (35CSR4) subsequent to the filing on June 11, 2009. These amendments were made in response to comments received and for which the DEP agreed with the commenter.

Section 16.4.d. was amended to include the word "impermeable", in association with the liner.

Section 16.4.h. was amended to address surface use after pit or impoundment reclamation and to clarify the reclamation period for impoundments.

Sections 21.1., 21.2., 21.4., 21.6.a., and 21.6.b. were amended to clarify the size of the pits and impoundments addressed in those sections.

Section 21.2.d. was added to require lifelines and fencing around pits and impoundments.

Section 21.6.b. was amended to change the pit and impoundment inspection frequency and to specify the time in which notification is to be provided to the Office of Oil and Gas regarding potential pit/impoundments hazards.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BRIEFING DOCUMENT

Rule Title: Oil and Gas Wells and Other Wells, 35CSR4

A. AUTHORITY: W. Va. Code §22-6-2

B. SUMMARY OF RULE:

The WVDEP, Office of Oil and Gas is proposing to revise existing rule 35CSR4. Series 4 is a legislative rule which applies to and governs the proceedings under W. Va. Code §22-6-1 et seq., relating to oil and gas wells. The proposed revisions to this rule address the following areas:

1) Add requirements for the construction of drilling pits and impoundments under section 16 and add a new section 21 establishing specific construction requirements for pits and impoundments greater than a certain size;

2) Change fees in section 5;

3) Require certain location information to be submitted as part of the plat in section 9;

4) Technical revisions and corrections were made throughout rule.

C. STATEMENT OF CIRCUMSTANCES WHICH REQUIRE RULE:

Much of the focus of the revisions is directed in the area of pit and impoundment construction. Recent developments in oil and gas well drilling activities are resulting in substantially larger fluid holding structures. For purposes of public safety and environmental protection, these structures should be designed and constructed in a properly engineered manner. Revisions to section 16 and the addition of section 21 are being proposed to better ensure that these fluid structures meet that objective of safety and environmental protection.

D. FEDERAL COUNTERPART REGULATIONS – INCORPORATION BY REFERENCE / DETERMINATION OF STRINGENCY:

There is no federal counterpart regulation; thus, no determination of stringency is required.

E. CONSTITUTIONAL TAKINGS DETERMINATION

In accordance with W. Va. Code §§ 22-1A-1 and 3(c), the Secretary has determined that this rule will not result in taking of private property within the meaning of the Constitutions of West Virginia and the United States of America.

F. CONSULTATION WITH THE ENVIRONMENTAL PROTECTION ADVISORY COUNCIL:

At its meeting on June 3, 2009, the Environmental Protection Advisory Council discussed the proposed rule. See attached minutes for Council's discussion.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: OIL AND GAS WELLS AND OTHER WELLS

Type of Rule: [X] Legislative [ ] Interpretive [ ] Procedural

Agency: WV DEPARTMENT OF ENVIRONMENTAL PROTECTION

Address: OFFICE OF OIL AND GAS

601 57TH STREET, SE
CHARLESTON, WV 25304

Phone Number: 304-926-0499 EXT. 1654 Email: JAMES.A.MARTIN@WV.GOV

Fiscal Note Summary

Summarize in a clear and concise manner what impact this measure will have on costs and revenues of state government.

This measure is not expected to impact costs and revenues of state government.

Fiscal Note Detail

Show over-all effect in Item 1 and 2 and, in Item 3, give an explanation of Breakdown by fiscal year, including long-range effect.

FISCAL YEAR			
Effect of Proposal	Current Increase/Decrease (use "-")	Next Increase/Decrease (use "-")	Fiscal Year (Upon Full Implementation)
1. Estimated Total Cost	0.00	0.00	0.00
Personal Services	0.00	0.00	0.00
Current Expenses	0.00	0.00	0.00
Repairs & Alterations	0.00	0.00	0.00
Assets	0.00	0.00	0.00
Other	0.00	0.00	0.00
2. Estimated Total Revenues	0.00	0.00	0.00

Rule Title: _____

Rule Title: OIL AND GAS WELLS AND OTHER WELLS

3. **Explanation of above estimates (including long-range effect):**
Please include any increase or decrease in fees in your estimated total revenues.

No impact is expected to costs and revenues.

MEMORANDUM

Please identify any areas of vagueness, technical defects, reasons the proposed rule would not have a fiscal impact, and/or any special issues not captured elsewhere on this form.

Date: 6/10/09

Signature of Agency Head or Authorized Representative

TITLE 35
LEGISLATIVE RULE
~~DIVISION~~ DEPARTMENT OF ENVIRONMENTAL PROTECTION
~~OFFICE OF~~ OIL AND GAS

SERIES 4
OIL AND GAS WELLS AND OTHER WELLS

§35-4-1. General.

1.1. Scope. -- This rule shall govern and apply to proceedings under W. Va. Code §22-6-1 et seq., ~~governing~~ related to oil and gas wells and other wells. Certain portions of this series shall govern and apply to W. Va. Code §22-12-1 et seq. related to groundwater protection and to W. Va. Code §22-10-1 et seq. related to abandoned wells.

1.2. Authority. -- W. Va. Code §§22-12-5, 22-1-3, and 22-6-2.

1.3. Filing Date. ~~-- May 10, 2001~~.

1.4. Effective Date. ~~-- May 10, 2001~~.

~~1.5. Former Rule Superseded. -- This legislative rule supersedes West Virginia Legislative Rule, Department of Energy, Division of Oil and Gas, Series 18, "Oil and Gas Wells and Other Wells" in effect on June 12, 1987.~~

~~1.6.~~1.5. Forms. -- An index of all current forms and copies of any forms currently used under or required by this rule may be obtained from the Chief. The Office of Oil and Gas reserves the right to amend any forms prospectively to accord more fully with W. Va. Code §22 and this rule.

§35-4-2. Definitions.

Unless the context in which used clearly requires a different meaning, the definitions contained in W. Va. Code §§22-1-2 and 22-6-1 shall apply to this rule in addition to those definitions set forth below:

2.1. "W. Va. Code" shall mean the West Virginia Code of 1931, as amended.

2.2. "Barrel" shall mean forty-two (42) U.S. gallons of two hundred thirty-one (231) cubic inches each of liquid, including slurries, at a temperature of sixty (60) degrees Fahrenheit.

2.3. "Chief" shall mean Chief of the Office of Oil and Gas as designated by the ~~Director~~ Secretary of the Division Department of Environmental Protection.

2.4. "Completion of the drilling process," as used in W. Va. Code §22-6-30, shall mean the date on which a drilling rig ceases operation on the drilling site for more than thirty (30) consecutive days.

2.5. "Cubic foot of gas" shall mean the volume of gas contained in one (1) cubic foot of space at a standard pressure base and a standard temperature base. ~~at a standard pressure base of~~ The standard pressure base shall be fourteen ~~point seven three (14.73)~~ and seventy-three hundredths pounds per square inch absolute

(14.73 psia), and ~~a~~ the standard temperature ~~of~~ base shall be sixty (60) degrees Fahrenheit.

2.6. "Day" shall mean a period of twenty-four (24) consecutive hours.

2.7. "Designated agent" shall mean a resident of the State of West Virginia designated by an operator as the agent or attorney in fact of the operator upon whom process, notices, orders, or other communications issued pursuant to W. Va. Code §22-6 may be served. *See* ~~sub~~section 10.3 below.

2.8. "Gas-oil ratio test" shall mean a test, by any means generally accepted in the industry, to determine the number of cubic feet of gas produced per barrel of oil produced.

2.9. "Gas well" shall mean any well which produces or appears capable of producing a ratio of six thousand (6,000) cubic feet of gas or more to each one (1)barrel of oil on the basis of the initial gas-oil ratio test.

2.10. "Impoundment" shall mean a man-made excavation or diked area for the retention of fresh water and into which no wastes of any kind are placed.

~~2.10.~~ 2.11. "Initial gas-oil ratio test" shall mean the gas-oil ratio test preformed for the purpose of completing Form IV-36, "Well Operator's Report of Initial Gas-Oil Ratio Test," to designate the type of well.

~~2.11.~~ 2.12. "Log" or "Well log" shall mean a systematic, detailed geological record of all formations, including coal, fresh water, and salt water encountered in the drilling of a well.

~~2.12.~~ 2.13. "Oil well" shall mean any well which produces or appears capable of producing a ratio of less than six thousand (6,000) cubic feet of gas to each one (1) barrel of oil on the basis of the initial gas-oil ratio test.

2.14. "Pit" shall mean a man-made excavation or diked area that contains or is intended to contain an accumulation of process waste fluids, drill cuttings, and/or any other liquid substance that could impact surface water or groundwater.

~~2.13~~ 2.15. "Surface owner of record, and ~~the term~~ "owner of record of the surface" as used in W. Va. Code §22-6-9 shall mean any person who is an owner of record of surface land or an undivided interest therein, whether or not the surface ownership is severed from the oil and gas or other mineral ownership.

~~2.14~~ 2.16. "Underground storage well" shall mean a gas well subject to the provisions of W. Va. Code §22-9-1, et seq.

~~2.15~~ 2.17. "Use" for the purpose of W. Va. Code §22-6-19 ~~is defined the same~~ shall have the same meaning as "Active Status" is defined in 35 CSR 5, which is "any well producing oil or gas in commercial quantities, or being operated pursuant to underground injection control permits, or being operated in conjunction with the underground storage of hydrocarbons."

§35-4-3. Inspectors Forms, Forms, Departmental Records.

3.1. Notice and Application Forms -- Forms WW-2(A), WW-2(B), WW-3(A), WW-3(B), WW-4(A), WW-4(B) shall accord the interested parties essentially the same notice, rights and statements of those rights and be in substantially the same form as the versions of those forms issued at the same time as this rule.

3.2. Report Forms -- The report forms to be used by oil and gas inspectors or the supervising inspector upon inspection pursuant to W. Va. Code §22 are as follows:

3.2.a. Form VI-26, "Inspector's Well Report" for permitted well work (obverse) except plugging and abandonment (reverse);

3.2.b. Form VI-27, "Notice of Violation;"

3.2.c. Form VI-28, "Imminent Danger Order;"

3.2.d. Form VI-29, "Notice Extending Abatement Time;"

3.2.e. Form VI-30, "Order for Failure to Abate Violation;" and

3.2.f. Form VI-31, "Notice of Abatement."

§35-4-4. Inspectors Findings of Violation, Abatement.

4.1. Violations, Findings and Orders - Findings and orders of oil and gas inspectors concerning violations discovered during an inspection shall be recorded on the appropriate form listed in subsection 3.2. Such finding and orders shall not be construed to limit the Office's power to initiate any other lawful proceedings concerning violations of W. Va. Code §22-6-1 et seq. or this rule.

§35-4-5. Permits, Notice, Review.

5.1. Reserved.

5.2. Application for Permit; Issuance, Conditions and Modifications.

5.2.a. An application for any well work permit required for an oil or gas well or an underground storage well by W. Va. Code §22-6-6, except for permits to plug a well, shall be made on Form WW-2(B), "Application for Well Work Permit," and shall be accompanied by:

5.2.a.1. A "Notice of Application for a Well Work Permit" in the form prescribed by ~~sub~~section 5.4 below;

5.2.a.2. A plat in the form prescribed by section 9 below;

5.2.a.3. A bond in one of the forms prescribed by section 10 below, or in lieu thereof cash or collateral security allowed by W. Va. Code §22-6-26;

5.2.a.4. Form WW-9, "Construction and Reclamation Plan," applicable to the plan required by W. Va. Code §22-6-6(d) and a plan for performing the reclamation required by W. Va. Code §22-6-30 and section 16 below;

5.2.a.5. ~~With any initial application to drill a well the fees required by W. Va. Code '22-6-2 (two hundred fifty dollars ($250) application fee), W. Va. Code '22-6-29 (one hundred dollars ($100) special~~

~~reclamation fee), and a fee of one hundred dollars ($100) general permit registration fee; and~~ The applicable fee(s), which include:

5.2.a.5.1. Four Hundred Dollars and Zero Cents ($400.00) for the application to conduct well work, pursuant to W. Va. Code §22-6-2(c)(10);

5.2.a.5.2. One Hundred Fifty Dollars and Zero Cents ($150.00) for the special reclamation fee, pursuant to W. Va. Code §22-6-29(b); and/or

5.2.a.5.3. One Hundred Dollars and Zero Cents ($100.00) for a general permit registration fee.

5.2.a.6. If applicable, the consent required by W. Va. Code §22-6-21.

5.2.b. Where there is more than one type of well work, a single application may be used provided all such well work is noted on the Form WW-2(B) filed in connection therewith.

5.2.c. An application for any liquid or waste disposal well permit required by W. Va. Code §22-6-6, except a permit to plug a well, shall be made on Form WW-3(B), "Liquid Injection or Waste Disposal Well Work Permit Application," and shall be accompanied by:

5.2.c.1. A "Notice of Liquid Injection or Waste Disposal Application" in the form prescribed by ~~sub~~section 5.4;

5.2.c.2. A plat in the form prescribed by section 9 below;

5.2.c.3. A bond in one of the forms prescribed by section 10 below, or in lieu thereof the cash or collateral security allowed by W. Va. Code §22-6-14;

5.2.c.4. Form WW-9, "Construction and Reclamation Plan," applicable to the reclamation required by W. Va. Code §22-6-30 and section 16 below; and

5.2.c.5. With the initial application to drill a well, the fees required by W. Va. Code §§22-6-2 and 22-6-29. A separate application for permit shall not be required for stimulating a well where stimulating is to be a part of the well work for which a permit is sought and such fact is noted on the Form WW-3(B) filed in connection therewith.

5.2.d. An application for a permit to plug a well shall be made on Form WW-4(B), "Application to Plug and Abandon a Well," and shall be accompanied by:

5.2.d.1. A "Notice of Application to Plug and Abandon a Well," in the form prescribed by ~~sub~~section 5.4 below;

5.2.d.2. A plat in the form prescribed by section 9 below; and

5.2.d.3. A bond in one of the forms prescribed by section 10 below, or in lieu thereof cash or collateral security required by W. Va. Code §22-6-23.

5.2.e. The applicant for any permit mentioned in this rule must file an original and two (2) copies of

the application and an original and four (4) copies of the notice, plat and, except for application for a permit to plug a well, a construction and reclamation plan.

5.2.f. The permit and any conditions to or modifications of the proposed permitted well work shall be issued by endorsement on or attachment to the "Permit" copy of the Application (Form WW-2(B), WW-3(B), or WW-4(B), as applicable).

5.2.g. Any permit issued ~~under section 5~~ pursuant to this section shall expire automatically unless the permit well work is commenced within twenty-four (24) months of the date the permit was issued. No permit shall be extended to authorize the commencement of well work after the expiration date of twenty-four (24) months.

5.2.h. No permit issued under this section ~~5~~ shall be transferable.

5.2.i. The determination to deny a permit under the provisions of W. Va. Code §22-6-6(h) or to deny or condition a permit under the provisions of W. Va. Code §22-6-11 shall be in writing and issued within sixty (60) days from the date the complete Notice and Application, ~~in complete form~~ including~~with the~~ all required documents, are filed.

5.2.j. Irrespective of the scope of the well work for which a permit was originally issued, a new application shall be filed for any well work subsequent to the expiration of the six-month or extended period for reclamation prescribed by W. Va. Code §22-6-30.

5.3. Flat Well Royalty Leases.

5.3.a. Any application for a well work permit subject to the provisions of W. Va. Code §22-6-8 shall include the data required by subsection (c) thereof. Such information may be recorded on the applicable form of the Notice of Application in lieu of filing copies of the well operator's lease or leases or other continuing contract or contracts.

5.3.b. If the applicant's right to extract, produce, or market the oil or gas is based upon a lease or leases or other continuing contract or contracts providing for a flat well royalty or any similar provision for compensation to the owner of the oil or gas in place that is not inherently related to the volume of oil and gas so extracted, produced, and marketed, then the affidavit to be furnished pursuant to W. Va. Code §22-6-8(e) shall be submitted on Form WW-60.

5.4. Notice to Surface Owners of Record; Proof of Notice; Comments.

5.4.a. For purposes of notice of surface owners of record pursuant to W. Va. Code §22-6-9, the applicant well operator shall be entitled to assume, subject to performing the public record review described in subdivision 5.4.b. below, that the specific person(s) listed on the relevant tax ticket(s) maintained by the Sheriff pursuant to W. Va. Code §11A-1-8 (as distinguished from the listing of an estate, or of person(s) as "agent" or with "et al." or "heirs" or other designation indicating unspecified owners or record), were in fact surface owners of record when the tax ticket was prepared.

5.4.b. To establish that a surface owner identified on a tax ticket has not transferred an interest in the surface, the well operator must review, from the date the surface owner acquired the surface, or for ten (10) years prior to the date of the review, whichever period is shorter, the "Grantor Index" and the "Fiduciary Index" maintained in the office of the Clerk of the County Commission. If the review identifies surface

owner(s) in replacement of or in addition to the tax ticket listing, all successor names shall likewise be checked in the Grantor and Fiduciary Indexes to establish the surface owner(s) of record on the date the review is made.

5.4.c. Where the relevant tax ticket(s) list an estate, or list person(s) as "agent" or with "et al." or "heirs" or other designation indicating unspecified owners of records in the office of the Clerk of the County Commission to determine whether the total number of such owners is more than three (3) and, if the total number of such owners is three (3) or less, the name(s) of the surface owner(s) of record on the date the review is made.

5.4.d. If the identification of the surface owners of record is made pursuant to the criteria of ~~subdivisions~~ subsections 5.4.a. and 5.4.b. or 5.4.c. within ninety (90) days of the date of filing of the application for a permit, the well operator need not review the records again prior to the filing.

5.4.e. Except where notice by publication is permissible under the provisions of W. Va. Code §22-6-9(b), the notice to surface owners of record required by W. Va. Code §22-6-9 shall consist of true, complete copies of all documents required under ~~sub~~section 5.2. of this rule, and a copy of the "Instructions to the Surface Owner" provided as part of the Office's application form.

5.4.f. Proof of personal service may be made by the return of any sheriff or other official empowered by law to serve process, or by affidavit of personal service on Form WW-70 by any person, including but not limited to any employee or agent of the well operator. If service is effected by certified mail, service is effective upon mailing and the return receipt card or other postal receipt for certified mailing with postal stamp affixed or photocopy will be accepted as proof of service.

5.4.g. Notice of publication under the provisions of W. Va. Code §22-6-9(b) shall be substantially as provided in Form WW-71. Proof shall be supplied by affidavit of publication from the newspaper.

5.4.h. No permit will be issued until all required proofs of notice have been filed with the Chief.

5.4.i. All comments filed pursuant to the provisions of W. Va. Code §22-6-10 shall be in writing, and should contain the name, address and telephone number of the person filing the comment, the well operator's name and well number, and the approximate location of the proposed well site including district and county as indicated in the permit application. Comments may be accompanied by other pertinent documents in support of the comment. Other than as prescribed in this rule, no particular form for the comment is prescribed.

5.5. Identification Markings.

5.5.a. Every well shall have attached or stamped, in a permanent manner, the API identification number which consists of the state (47), county (001 through 109), and permit number. Such number shall be no less than one-half (1/2) inch in height and detectable ~~information~~ by any interested person approaching the well. Any additional information the well operator may desire to display may be incorporated in the permanent identification plat or stamp in such a manner that it will not confuse or distort the permanent API identification number.

5.5.b. Except as provided below, upon the completion of the plugging and filling of any abandoned well, a permanent monument or marker consisting of a length of pipe (minimum diameter size six (6) inches) filled with concrete (or the equivalent thereof if approved by the Chief) shall be erected over the well; the marker shall extend no less than thirty (30) inches above the surface and not less than ten (10) feet below the

surface and into the well, and shall be sealed with concrete for the purpose of making the marker permanent. The API well identification number which consists of the state (47), county (001 through 109), and permit number shall be attached or stamped in a permanent manner to said monument; and such numbering shall be no less than one half (1/2) inch in height and detectable by any interested person approaching the marker. The erection of the marker shall in no way interfere with the bleeder pipe from the well where such pipe is required, or the vent or other device installed pursuant to W. Va. Code §22-6-24. Such manner shall be accurately described on Form WR-38, "Affidavit of Plugging and Filling Well" (*see* ~~sub~~section 13.10 below) as to time and manner of plugging and filling the well, and shall be approved by the Chief as a satisfactory landmark that may be used as such in the location of adjacent wells. Two (2) permanent reference points with courses and distances from the abandoned well shall be designated and prescribed on the plat required by subdivision 5.2.d above in the form prescribed by section 9 below, accompanying Form WW-4, "Notice of Intention to Plug and Abandon a Well," if any change in the plat is necessary, accompanying Form IV-38, "Affidavit of Plugging and Filling Well" (*see* ~~sub~~section 13.10 below).

5.6. Parties Responsible. All contractors and drillers, including all service companies carrying on business or doing work in oil and gas fields in West Virginia, as well as lease holders and operators generally, shall take notice of and are hereby directed to observe and apply the provisions of W. Va. Code §22-6 and this rule; and all contractors, drillers, service companies and operators shall be held responsible for violations thereof.

5.7. Evidence of Performance.

5.7.a. After the completion of the work authorized to be done by any permit required by W. Va. Code §22-6-6, the permittee shall comply with filing requirements of ~~the~~ W. Va. Code §22-6-22 and section 12 of this rule.

5.7.b. In addition to the requirements of subdivision 5.7.a, following completion of plugging a well, the permittee shall also comply with the affidavit requirements of W. Va. Code §22-6-23 and ~~sub~~section 13.10 below.

§35-4-6. Plats, Notice to Coal Owner, Operator or Lessee.

6.1. Plats.

6.1.a. The plat submitted pursuant to W. Va. Code §22-6-12 "before drilling for oil or gas, or before fracturing or stimulating a well" shall contain the information required by W. Va. Code §22-6-12 and otherwise by this rule in the form and manner provided in section 9 below. A separate plat shall not be required for stimulating a well where stimulating is to be a part of the work for which a permit is sought and such fact is noted on Form WW-2(B), "Application for a Well Work Permit."

6.1.b. A plat is hereby required to accompany all applications for "fracturing any well" under W. Va. Code §22-6-13 by means subsequent to and not an incident of previously permitted drilling, redrilling, deepening, pressuring or converting such well. If the well to be fractured is an oil or gas well, the plat shall contain the same information required for plats by W. Va. Code §22-6-12 and otherwise by this rule, and shall be in the form and manner provided in section 9 below; and if the well is a liquid injection or waste disposal well, the plat shall contain the same information required for plats by W. Va. Code §22-6-14 and otherwise by this rule, and shall be in the form and manner provided in section 9.

6.1.c. The plat required by W. Va. Code §22-6-14 "before drilling a well for the introduction of liquids for the purposes provided in W. Va. Code §22-6-25 or for the introduction of liquids for the disposal of

~~sewage, industrial waste or other waste~~ pollutants or the effluent therefrom on any tract of land, or before converting an existing well for such purposes" shall contain the information required by W. Va. Code §22-6-25 and otherwise by this rule and shall be in the form and manner provided in section 9 below. Submission of a separate plat shall not be required before stimulating such a well, where stimulating is to be part of the well work for which a permit is sought and such fact is noted on Form WW-3(B), "Liquid Injection or Waste Disposal Well Work Permit Application."

6.2. Notice to Coal Operators, Owners or Lessees - A copy of the completed notice and application for any permit required by W. Va. Code §22-6-6, including the associated plat and Construction and Reclamation Plan required by section 5 above, shall be used as the form of the Notice to Coal Operators, Owners or Lessees required by W. Va. Code §§22-6-12, 22-6-13 and 22-6-14 and shall be mailed by registered or certified mail to coal operators, owners or lessees.

§35-4-7. Operational Regulations on Liquid Injection and Waste Disposal Wells.

7.1. Tubing and Packer Arrangements; Variance; Regulation of Pressure.

7.1.a. Injection of water, other liquids, or wastes shall be accomplished through a tubing and packer arrangement with the packer set immediately above the injection zone, and the annulus between the tubing and casing shall be monitored by pressure-sensitive devices or through production casing adequately seated and cemented that will allow monitoring of the annulus between the injection casing and the last intermediate casing string or coal-fresh water casing string, as the case may be. Upon a proposal made in detail on Form WR-37, "Pre-Operations Certificate for Liquid Injection or Waste Disposal Well," a variance from any of the foregoing requirements may be granted upon a showing in the application or at the hearing by an individual operator that alternate prudent engineering practices will prevent migration outside the target information.

7.1.b. The injection pressure shall be regulated to minimize the possibility of fracturing the confining strata and the Form WR-37, "Pre-Operation Certificate for Liquid Injection or Waste Disposal Well," submitted for each such well shall set forth the proposed operation in detail, so as to demonstrate that this requirement will be satisfied.

7.2. Disposal of Connate or Polluted Water - No discharge of salt water, brackish water, or other water unfit for domestic livestock or other general use shall be made into the waters of the state unless such disposal is approved by permit under applicable state and federal laws. When underground disposal of such water is required, such disposal well and related facilities will be permitted only upon application and approved as required by applicable federal and state laws. Disposal into the same formation from which the water is produced is preferable.

7.3. Pre-Operation Certificate.

7.3.a. The Chief or his appointed representative shall be notified no less than twenty-four (24) hours prior to mechanical integrity testing to allow the Chief or his representative the opportunity to witness the tests. Copies of the results of all tests shall be submitted with Form WR-37 as provided in ~~subdivision~~ subsection 7.3.b below.

7.3.b. Upon successful completion and mechanical integrity testing, and prior to the first injection into a permitted liquid injection or waste disposal well, the operator shall furnish the Office with certification on Form WR-37, "Pre-Operation Certificate for Liquid Injection or Waste Disposal Well," indicating that all requirements of ~~sub~~sections 7.1 and 7.2 above have been satisfied. The certificate shall include:

7.3.b.1. Identification of the injection zone by name of geological target formation and depth (top and bottom of zone), the number of perforations, if applicable, or the interval of open hole;

7.3.b.2. The maximum bottom hole pressure in pounds per square inch and maximum rate of injection in barrels of liquids per hour or cubic feet of gases per hour;

7.3.b.3. A detailed identification of the materials being injected, including additives;

7.3.b.4. Specifications of cathodic protection and other corrosion control measures;

7.3.b.5. Filters, if any;

7.3.b.6. The entire casing and cementing record, any packers and other special downhole equipment, and cement bond logs; Provided, that this data need not be included on Form WR-37 where the casing and cementing record is furnished on Form WR-35, "Well Operator's Report of Drilling, Fracturing and/or Stimulating," associated with the project;

7.3.b.7. Certification that the mechanical integrity of the well has been tested and statement of the test method;

7.3.b.8. Facilities or systems to protect the integrity of the geological target formation or to prevent fracturing the confining strata; and

7.3.b.9. Application for variance, if any, ~~from~~ as described in ~~sub~~section 7.1 above.

7.4. Partial Exemption for Certain Wells - Any liquid injection or waste disposal well in existence and used as such prior to July 1, 1969 shall be exempted from the requirements of subsections 7.1, 7.2, and 7.3 above, provided that the operator has, on or before July 1, 1979, filed an area plat or plats showing all of such operator's liquid injection or waste disposal wells. Such exemption shall remain effective until such time as, in the opinion of the Chief and upon notification thereof to the well owner or operator, it is determined that said well is leaking liquids to others' wells or the surface.

7.5. Monitoring by the Operator - The well owner or well operator of a liquid injection or waste disposal well shall monitor daily and submit to the Office monthly the injection pressures and volumes on Form WR-40 "Report for Liquid Injection, Waste Disposal or Enhanced Recovery." The Chief may require more frequent or continuous monitoring and more frequent reporting if, in his opinion, good reason exists therefore.

7.6. Limitation - W. Va. Code §22-6-14 and ~~sub~~sections 7.1 through 7.5 of this rule do not apply to injection of water or other liquids into a well for the purpose of fracturing or stimulating a well or underground gas storage well operations, including injection periods.

7.7. Authorization and Re-testing of Wells.

7.7.a. No liquid injection or waste disposal well shall be permitted to inject until a Pre-Operation Certificate (Form WR-37) is reviewed and approved by the Chief.

7.7.b. The mechanical integrity of a liquid injection or waste disposal well must be demonstrated to the approval of the Chief again within five (5) years from the last test date in order for injection to continue.

§35-4-8. Objections to Applications; Notice.

8.1. Objection Filed by Coal Operators, Owners or Lessees - Objections by coal operators, owners, or lessees filed pursuant to W. Va. Code §§22-6-15, 22-6-16 or 22-6-17, shall be made on Form OB-13, "Objection Under W. Va. Code §§22-6-15, 22-6-16, or 22-6-17 to A Proposed Permitted Work."

8.2. Objection by the Office - Objections by the Office to any proposed well work under W. Va. Code §§22-6-15, 22-6-16, 22-6-17, shall be made in writing and in the same detail required of objections by coal operators, owners or lessees.

8.3. Notice to Applicant of Objection.

8.3.a. If a coal operator, owner, or lessee files or the Office makes objection to proposed work under W. Va. Code §22-6-16, the Office shall notify the applicant well operator by Form OB-14, "Notice to Well Operator of Objection under W. Va. Code §§22-6-15 or 22-6-16," attaching copies of all such objections.

8.3.b. If a coal operator, owner, or lessee files or the Office makes objection under W. Va. Code §22-6-17, the Office shall notify the applicant well operator as provided by ~~sub~~section 8.4 below.

8.4. Notice to Shallow Gas Well Review Board of Objections; Copies to Applicant - If a coal operator, owner or lessee files or the Office makes objections under W. Va. Code §22-6-17, the Office shall notify the Chairman of the Shallow Gas Well Review Board by Form OB-15, "Notice to Shallow Gas Well Review Board of Objection under W. Va. Code §22-6-17 to a Proposed Drilling Site," attaching copies of all objections made pursuant to ~~sub~~sections 8.1 and 8.2 above and all other information required by W. Va. Code §22-6-17. Copies of all such documents shall be sent to the applicant well operator as its notice of objection.

§35-4-9. Form and Contents of Plats.

9.1. Statutory Requirements for Plats - Any plats required to be furnished under W. Va. Code §§22-6-12 or 22-6-14 (*see* subsection 5.2 above), shall contain all information specified in the statutory section requiring the plat.

9.2. Additional Requirements for Plats - Any plat required to be furnished under W. Va. Code §§22-6-12 or 22-6-14 or under ~~subdivision~~ subsection 6.1.b. or ~~sub~~section 13.1 of this rule shall conform to the following standards of accuracy and depiction:

9.2.a. Accuracy - An accuracy of one (1) part in two thousand five hundred (2,500) is required for location of wells on land containing workable coal beds which are tributary to operator coal mines. All other plats require a minimum accuracy of one (1) part in two hundred (200). The attained accuracy standard shall be stated on every plat.

9.2.b. Permanent Landmarks - At least two (2) permanent monuments or landmarks with courses and distances to the subject well shall be shown on the basis of an on-the-ground survey and, if any such monument or landmark is not a permanently established property corner, it shall be referenced to a permanently established property corner by courses and distances on the basis of an on-the-ground survey.

9.2.c. Physical Location of Well - Every well shall be drilled within ten (10) feet of the exact well

location designated on the plat. To facilitate compliance and verification, the plat for a new well shall designate at least two (2) reference points from which, after the drilling site has been cleared and graded, the proposed well location can be accurately reestablished by the well operator and, if desired, subsequently verified by the oil and gas inspector or any interested person. When the survey party stakes the proposed well location, it shall flag or otherwise mark the reference points, which may be permanent (such as standing trees) or temporary (such as set stakes), and such reference points shall be beyond the limits of the drilling site but within three hundred (300) feet of the well location. A description of the reference points and their location with reference to the well location shall be indicated on a detail drawing or a narrative statement on the face of the plat.

9.2.d. Description - Landmarks and permanently established property corners used shall be named and described on all plats. They shall include standing corner trees, set stones, iron pipes, T-rails, or other manufactured monuments. Existing wells (operating or abandoned) shall also be considered established landmarks if said wells are accurately platted and on file with the Office. If landmarks used are not permanently established property corners, the landmark must be adequately referenced to such property corners to permit their future location.

9.2.e. Method of Showing Property Lines - The courses and distances of all farm lines adjoining and those connecting the landmarks or permanently established property corners within the scope of the well location plat shall be shown thereon. All lines actually surveyed shall be shown on such plat in solid lines. Lines taken from deed descriptions only shall be shown by broken lines.

9.2.f. Proven Elevation - The elevation of the surface of the well location shall be given, and it shall be tied to either a government bench mark or other point of proven elevation. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

9.2.g. North-South Line - A north and south line shall be given and point to the top of the plat.

9.2.h. Scale and Size of Plat - If practicable, all plats shall be drawn to a scale of one (1) inch equals two thousand (2,000) feet (1:24,000) or to even multiples thereof for each reduction of the plat photographically to a scale of one (1) inch equals two thousand (2,000) feet. The plat shall be eight and one-half (8 1/2) inches by fourteen (14) inches in size. Plats may be submitted electronically, using a format approved by the Chief.

9.2.i. Topographic Map Location of Well - The topographic map location of the well for which any permit application is made pursuant to W. Va. Code §22-6-6 shall be shown on the plat by a "cross" with the measured distance in feet from the nearest two point five (2.5) minute latitude and longitude intersection using the North East (upper right) border of the plat on a seven point five (7.5) minute (1:24,000) topographic map. <u>The plat shall also contain Universal Transverse Mercator (UTM) Zone 17 Northing and Easting coordinates in North American Datum (NAD) 83(CORS96).</u> Each plat shall indicate the quadrangle name of the topographic map used.

9.2.j. Wells - All wells within the scope of the plat, whether active, drilling, or abandoned, shall be shown. The scope of every plat shall be sufficient to show all wells within one thousand two hundred (1,200) feet of the well that is the subject of the new application and, in the case of an application for a shallow gas well with a depth of three thousand (3,000) feet or more and that penetrates a coal seam, the scope of the plat shall be sufficient to show all wells within two thousand four hundred (2,400) feet of the well that is the subject of the application. Each well so shown, including the subject well, shall bear a designation that permits the type (oil, gas, liquid injection under W. Va. Code §22-6-14, underground storage or storage observation)

and status (active, abandoned or drilling) of each such well to be determined by use of:

9.2.j.1. API permit number (excluding state and county) for each well having such a permit number;

9.2.j.2. In parentheses, and following the API number if such is listed, the type and status numbers provided below; and

9.2.j.3. The symbols provided ~~below~~ in Appendix A of this rule.

9.2.k. The kind and status numbers to be used shall be as follows:

9.2.k.1. Oil Wells:

01 - Shallow, active

02 - Shallow, abandoned

03 - Shallow, Drilling

04 - Deep, active

05 - Deep, abandoned

06 - Deep, drilling

9.2.k.2. Deep gas wells:

07 - Production, active

08 - Production, abandoned

09 - Production, drilling

10 - Underground storage, active

11 - Underground storage, abandoned

12 - Underground storage, drilling

13 - Storage observation, active

14 - Storage observation, abandoned

15 - Storage observation, drilling

9.2.k.3. Shallow gas wells:

16 - Less than three thousand (3,000) feet, production, active

17 - Less than three thousand (3,000) feet, production, abandoned

18 - Less than three thousand (3,000) feet, production, drilling

19 - Less than three thousand (3,000) feet, underground storage, active

20 - Less than three thousand (3,000) feet, underground storage, abandoned

21 - Less than three thousand (3,000) feet, underground storage, drilling

22 - Less than three thousand (3,000) feet, storage observation, active

23 - Less than three thousand (3,000) feet, storage observation, abandoned

24 - Less than three thousand (3,000) feet, storage observation, drilling

25 – Three thousand (3,000) feet or more, production, active

26 – Three thousand (3,000) feet or more, production, abandoned

27 – Three thousand (3,000) feet or more, production, drilling

28 – Three thousand (3,000) feet or more, underground storage, active

29 – Three thousand (3,000) feet or more, underground storage, abandoned

30 – Three thousand (3,000) feet or more, underground storage, drilling

31 – Three thousand (3,000) feet or more, storage observation, active

32 – Three thousand (3,000) feet or more, storage observation, abandoned

33 – Three thousand (3,000) feet or more, storage observation, drilling

9.2.k.4. Liquid injection wells:

34 - Active

35 - Abandoned

36 - Drilling or being converted

9.2.k.5. Waste disposal wells:

37 - Active

38 - Abandoned

39 - Drilling or being converted

9.2.k.6. Gas injection wells:

40 - Active

41 - Abandoned

42 - Drilling or being converted

~~9.2.l. The symbols to be used shall be as found in Appendix A.~~

~~9.2.m.~~ 9.2.l. Other Surface Features - In addition to the surface features and owner identification data required by statute or by the foregoing specification of subsection 9.2, the plat shall also show the following surface features lying within the scope of the plat:

~~9.2.m.1~~ 9.2.l.1. Water wells within two hundred (200) feet of the well for which any permit under W. Va. Code '22-6-6 is being sought, except for liquid or waste disposal wells, in which case water wells within one thousand (1,000) feet of the well shall be shown;

~~9.2.m.2~~ 9.2.l.2. Dwellings within two hundred (200) feet of the well for which any such permit is being sought;

~~9.2.m.3~~ 9.2.l.3. Streams;

~~9.2.m.4~~ 9.2.l.4. Roads and highways; and

~~9.2.m.5~~ 9.2.l.5. Railroads with indication of the owners' names.

~~9.2.n.~~ 9.2.m. Names - The plat shall state the names of the surface owners and the royalty owners of the land at the well location.

9.3. Plat Certification - Surveys and plats shall be made under the supervision of a registered professional engineer or licensed land surveyor ~~entitled and~~ licensed by law to practice in the State of West Virginia. The certificate shall be signed and certified by the registered professional engineer or licensed land surveyor in the following manner:

"I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the ~~Division~~ Department of Environmental Protection."

9.4. Re-use of Plats - Following issuance of the initial permit for drilling a well, any subsequent application for a new permit involving the same well may be accompanied by an accurate copy of the plat accepted by the Office for use with the permit issued for the most recent previous application, updated as necessary to reflect new data or additional data not required by statute or this rule; Provided, that a new certification shall be necessary in the form required by ~~sub~~section 9.3 above. However, a new certification is not required for a plugging permit.

9.5. Permanent Character of Plats - Every plat submitted under section 9 of this rule shall be of permanent

character, that is, on linen or plastic or other material of comparable quality and with indicia or other ink resulting in a depiction not subject to substantial degradation through time from exposure to ordinary conditions of temperature, humidity, and light. Plats may be submitted electronically, using a format approved by the Chief.

§35-4-10. Separate Bonds; Blanket Bonds; Financial Responsibility; Registration; Designation of Agent; Transfer of Title and Operator Status; Transfer Procedures; Periodical Circular; Hearings; Ineffective Bonds; and Financial Responsibility from Competing Interests.

10.1. Separate Bonds.

10.1.a. Each permit application filed after the effective date of this rule shall be accompanied by a separate bond with corporate surety or cash or other collateral security in compliance with W. Va. Code §22-6-26 and shall be submitted with form OP-7, "Bond for Single Oil or Gas Well, Single Liquid Injection Well or Single Waste Disposal Well," except where: (a) a blanket bond is being furnished pursuant to W. Va. Code §22-6-26(c); or (b) the permit application is for a permit to plug a well that is already subject to corporate surety, cash or collateral security that satisfied applicable requirements at the time such corporate surety, cash or collateral security was furnished.

10.1.b. The demonstration of financial responsibility for individual wells after the effective date of this rule shall be accompanied by a separate bond with corporate surety or cash or other collateral security in the amount of five thousand dollars ($5000) in compliance with W. Va. Code §§22-6-26, 22-10-4 and 22-10-5, except where a blanket bond is being furnished pursuant to W. Va. Code §22-6-26(c), and shall be submitted with Form OP-7, "Bond for Single Oil and Gas Wells, Single Liquid Injection Wells, or Single Waste Disposal Wells." Any corporate surety bond, cash or collateral security furnished prior to the effective date of this rule shall remain in effect for the Office until such time as the well operator is issued any new determination of financial responsibility as may be required by this rule.

10.1.c. A well currently ~~under~~ subject to a bond of less than ~~a~~ five thousand dollars ($5,000) ~~bond~~ or for which no bond exists for the determination of financial responsibility shall be transferred to an existing or new five thousand dollar ($5,000) bond in compliance with W. Va. Code §22-6-26 by filing form OP-77.

10.2. Blanket Bonds.

10.2.a. Any blanket bond furnished after the effective date of this rule shall have corporate surety or cash or other collateral security and shall be submitted with Form OP-8, "Blanket Bond for Oil and Gas Wells, Liquid Injection Wells, and Waste Disposal Wells." Any blanket bond with corporate surety, cash or collateral security furnished in connection with any permit or permits issued prior to July 11, 1985 shall remain in effect for the benefit of the Office until such time as the well operator is issued any additional permit and such well operator has furnished new or additional corporate surety, cash or collateral security complying with the ~~Act~~ statute; Provided, that if a blanket bond furnished prior to July 11, 1985 complies with the requirements of the ~~Act~~ statute, a new blanket bond shall not be required to be submitted with a permit application; Provided further, that if a permit application is for a permit to plug a well that is already subject to corporate surety, cash or collateral security that satisfied applicable requirements at the time such corporate surety, cash or collateral security was furnished, no additional corporate security, cash or collateral security shall be required.

10.2.b. The demonstration of financial responsibility for multiple wells after the effective date of this rule shall be accompanied by corporate surety or cash or other collateral security in compliance with W. Va. Code §§22-6-26, 22-10-4 and 22-10-5 and shall be submitted with Form OP-8, "Blanket Bond for Oil and Gas

Wells, Liquid Injection Wells, and Waste Disposal Wells." Any corporate surety bond, cash or collateral security furnished prior to the effective date of this rule shall remain in effect for the Office until such time as the well operator is issued any new determination of financial responsibility as may be required by this rule.

10.2.c. Wells currently ~~under~~ subject to a blanket bond of less than ~~a~~ fifty thousand dollars ($50,000), ~~blanket bond~~ or for which no bond exists, or for which a new blanket bond is desired ~~a new blanket bond~~ for the determination of financial responsibility shall be transferred to an existing or new fifty thousand dollar ($50,000) blanket bond in compliance with W. Va. Code §22-6-26 by filing form OP-77.

10.3. Registration; Designated Agent; Transfer of Title and Operator Status.

10.3.a. All persons owning or operating or proposing to own or operate any well in West Virginia shall register with the Chief. In all cases, an agent or attorney in fact shall be designated on Form OP-1, "Designation of Agent by Well Owner or Operator" by and for each well or operator upon whom process, notices, orders, and other communications issued pursuant to W. Va. Code §22 may also be served; but the designation shall not be effective until it has been accepted in writing by the designee and approved by the Office. Every well owner or operator who has designated such agent or attorney in fact shall, within five (5) days after termination of such designation, notify the Office of such termination and designate a new agent on Form OP-1. This rule applies to all well operators, not merely those whom W. Va. Code §22-6-6 specifically requires to designate an agent; Provided, that a well operator who is a natural person and a resident of the State of West Virginia may list himself instead of an agent for service of all papers.

10.3.a.1. When title to a well or the right to operate a well is transferred from one (1) well operator to another, the Chief shall be notified in writing within five (5) days by the transferor well operator or, if he no longer exists, by one or more of the owners of the well, the name and address of the transferee well operator. A copy of such notification shall be delivered to the transferee well operator. Failure to notify the Chief of such transfer shall be a violation of this rule by said transferor and shall be punishable under W. Va. Code §22-6-34, and in addition, all bonds of such transferor under W. Va. Code §22-6 shall be forfeited.

10.3.a.2. The transferee well operator shall forthwith register with the Office if he has not previously registered. In any event, said transferee shall forthwith notify the Office of his designated agent or attorney in fact pursuant to ~~subsection 10.3~~ this section, unless a designation has already been made and approved. The transferee well operator shall file with the Office on form OP-77 the well name and the permit number of the subject well, the county and district in which the subject well is located, the names and addresses of the transferor well owners or operators and the transferee well operators, a copy of the instrument of assignment or transfer, or a certification of such assignment or transfer acceptable to the Chief, and the applicable bond, cash, or collateral security described in W. Va. Code §22-6-26.

10.3.a.3. No assignment or transfer by the transferor owner shall relieve the transferor well owner of any obligation and liabilities pursuant to this rule or W. Va. Code §22, unless and until the Office of Oil and Gas accepts and then notifies the transferee and transferor as outlined in subsection 10.4 below that they have complied with the provision of section 10.

10.4. Filing Requirements and Procedure for the Transfer of Operator and Declaration of Operator Status.

10.4.a. General requirements.

10.4.a.1. No transfer of operator or declaration of operator status under this rule will be approved until such time as a copy of Form OP-1, "Operator Registration Form and Designation Form," has been filed.

10.4.a.2. All forms promulgated by the Office of Oil and Gas and required by this rule may be replaced by copies of any applicable successor forms promulgated by the Office of Oil and Gas.

10.4.a.3. A separate application must be submitted for each well for which a transfer is desired.

10.4.a.4. Each application must be accompanied by a filing fee of fifty dollars ($50). Where an operator is submitting several applications at one time, a single check may be submitted for a sum equal to the number of applications multiplied by fifty dollars ($50). Such fee should be paid by the transferor, but in no case will any well be transferred without the fee.

10.4.a.5. Each application shall be on Form OP-77.

10.5 Transfer Procedures.

10.5.a. Initial Action by the Office of Oil and Gas - Upon receipt of an application to transfer a well from one operator to another or to transfer a well by a single operator to another bond, the Office of Oil and Gas will conduct a review of the submitted data along with other information available to it within sixty (60) days.

10.5.b. Periodical circular.

10.5.b.1. The Office of Oil and Gas will publish from time to time, but not less often than monthly, a circular indicating the status of various applications filed under this rule.

10.5.b.2. The circular will identify each well by applicant and by a file number which will indicate:

10.5.b.2.A. The date received by the Office of Oil and Gas;

10.5.b.2.B. The API county and permit number;

10.5.b.2.C. The name of the transferee and transferor; and

10.5.b.3.2.D. The date on which the determination order was final.

10.5.c. Notice of Hearing - Notice of all filings for applications for transfer and designation of operator status under this rule and 35 CSR 5 §3.1 (Procedure for Designation of Bona Fide Future Use) will be published by the Office of Oil and Gas, indicating that interested persons may intervene in the application by filing written comments with the Office of Oil and Gas within fifteen (15) days from the date that the circular is published. If objections are made by any interested person or by the Office of Oil and Gas or if the Chief determines that other information may be necessary in order to make a determination, a public hearing ~~will~~ may be held ~~in accordance with 35 CSR 20~~. On the hearing date, the applicant and all persons who have timely filed objections on or before the date of the hearing will be given an opportunity to present additional evidence.

10.5.d. Determination - After a hearing has been held, a determination as to whether the well qualifies to be transferred to the transferee will be made by the Chief. If no objection is made within the time prescribed by ~~subdivision~~ subsection 10.5.c above, the Chief will make a determination as to whether the well qualifies to be transferred. Notice will be given of the Chief's approval of the transfer by publication in the circular, and

the Chief shall give written notice of release to the transferor well owner of any bond and return to the transferor well owner any cash or collateral securities deposited pursuant to W. Va. Code §§22-6-12, 22-6-14 or 22-6-26.

10.6. If for any reason the bond or other proof of financial responsibility on a well is rendered invalid or ineffective, the operator shall have sixty (60) days in which to replace such bond or other proof of financial responsibility. In the event such bond or other proof of financial responsibility is not replaced, then the Chief shall order the well to be shut in and may order the well to be plugged.

10.7. Nothing in this section shall prohibit the Chief from accepting and holding bonds or other forms of financial responsibility from more than one competing interest.

§35-4-11. Operational Criteria.

11.1. Casing Not Exclusive - In addition to the casing required by W. Va. Code §§22-6-18, 22-6-19, 22-6-20, and 22-6-21, there shall be used in each well such material and equipment and there shall be employed such additional procedures as are necessary for the purpose of separating high pressure zones from low pressure zones, the producing horizons, the water bearing strata, and mineable coal zones for the life of the well.

11.2. Multiple Casing Through Coal Seams.

11.2.a. The coal protection casing required by W. Va. Code §§22-6-18 through 22-6-20 to be installed through the workable coal seam or seams shall be in addition to the production casing.

11.2.b. The coal protection casing required by W. Va. Code §22-6-18 shall have cement circulated in the annular space outside said casing. The volume of the cement needed shall be calculated by using approved methods to assure the return of the cement to the surface. In the event cement does not return to the surface, every reasonable attempt will be made to fill the annular space by introducing cement from the surface.

11.3. Fresh Water Casing - The fresh water protective casing required by W. Va. Code §22-6-21 shall extend at least thirty (30) feet below the deepest fresh water horizon (that being the deepest horizon that will replenish itself and from which fresh water or usable water for household, domestic, industrial, agricultural, or public use may be economically and feasibly recovered) and shall have cement circulated in the annular space outside the casing. The volume of cement needed shall be calculated using approved engineering methods to assure the return of the cement to the surface. In the event cement does not return to the surface, the district inspector shall be notified. If the top of cement cannot be located using sound engineering practices approved by the Chief or his authorized representative, then an electric log or similar technology approved by the Chief shall be used. Sound engineering practice approved by the Chief or his authorized representative shall be used to fill the annular space back to the surface. Requests to approve methods other than pre-approved practices shall be acted upon by the Chief or his authorized representative within twelve (12) hours of actual notice to the Chief or his authorized representative, otherwise the request will be deemed approved. If the coal protection casing is cemented to the surface in accordance with the prescribed procedure, this may also be considered a fresh water protective casing. In no case shall the fresh water casing penetrate salt water or gas bearing strata or extend below sea level. There shall be no oil and gas production through the fresh water casing for new wells or the redrilling of existing wells permitted on or after August 1, 1993. Variances from the requirements of this section shall be granted on a site specific or area basis in accordance with section 18 of this rule.

11.4. Cement Strength - Cement placed in the annular space around the casing shall be allowed to set to a minimum compressive strength of five hundred (500) pounds per square inch, using approved engineering data for the type of cement used. The waiting time for cement used in compliance with ~~sub~~section 11.5 of this rule shall be eight (8) hours. The waiting time on any other cement shall be in no case less than eight (8) hours.

11.5. Cement Type - Cement used to fill the annular space around the casing required in ~~sub~~sections 11.2 and 11.3 of this rule shall be American Petroleum Institute Class A Ordinary Portland cement with no greater than three percent (3%) calcium chloride and no other additives; Provided, that if the well operator furnishes satisfactory proof that different cement types are adequate, the Chief may approve use of such different cement types.

11.6. Annual Inspection - The operator shall conduct an inspection at the surface of each unplugged well at which drilling has been completed for more than five (5) years. Such an inspection shall be conducted no less frequently than once each calendar year in a method approved by the Chief. Certification of the performance of such inspection, in a form approved by the Chief, shall be filed with the Office of Oil and Gas in conjunction with the operator's annual report as required ~~under~~ by ~~sub~~section 15.1 below. Should the operator detect evidence of any significant leakage or other indications of casing integrity failure, the operator shall give notice to the Office of Oil and Gas and take such measures as may be appropriate to eliminate or mitigate the leakage.

11.7. Drilling Practices Prior to Freshwater Casing - Prior to the cementing of the freshwater casing as required by ~~sub~~section 11.3 above, drilling practices and procedures, such as air or water pressure and soaping, shall be conducted using operating practices so as to minimize damage or disturbance or the possibility of unnecessary damages or disturbance to the uncased strata/formations and groundwater contained in any of those formations. The requirements of this section shall not prevent the use of drilling practices and procedures reasonably necessary to the successful drilling of the well in a safe manner. The requirements of this section shall not be construed to prohibit practices specifically allowed by statute or other regulations.

11.8. Blowout Prevention Training - The well operator shall assure that, at all times during the operation of the drilling rig, a person shall be present who has successfully completed a training course on blowout prevention approved by the Chief.

§35-4-12. Well Records.

12.1. Well Records Made During Permitted Work - The well operator or his contractor (drilling contractor or other contractor, as appropriate) shall keep at the well location a copy of the application as permitted, including the associated plat and Construction and Reclamation Plan required by ~~sub~~section 5.2 of this rule. The well operator or his contractor (drilling contractor or other contractor, as appropriate) shall also make and preserve at the well location accurate records of all well work performed pursuant to the permit, including documentation by the contractor or person performing the cementing services of the time of completion of cementing and the volume of cement used for the cementing of the fresh water casing. The records shall be complete enough to support, as applicable, the entries of well work done and related data on Form WR-35, "Well Operator's Report of Drilling, Stimulating or Physical Change," Form WR-36, "Well Operator's Report of Initial Gas-Oil Ratio Test," Form WR-37, "Pre-Operation Certificate for Liquid Injection or Waste Disposal Well," and Form WR-38, "Affidavit of Plugging and Filling Well," but forms WR-35 through WR-38 shall reflect data discovered or changes made after the permitted well work has been finished and before the forms are filed. The records made and preserved at the well location and the recordings made on Form WR-35 shall include, but not be limited to, indications of caverns, open mines, or other voids, whether the fresh water casing cement did circulate to the surface, and the efforts made to fill the annular space and the results. Unless

such records of well work performed are prepared by the well operator or owner, a copy of all such records shall be delivered to the well owner or operator.

12.2. Filing of Well Record and Related Forms.

12.2.a. Within ninety (90) days after the completion of permitted well work, two (2) copies of Form WR-35, "Well Operator's Report of Drilling, Fracturing and/or Stimulating or Physical Change," containing in proper form the geological information required by W. Va. Code §22-6-22, Form WR-36, "Well Operator's Report of Initial Gas-Oil Ratio Test," (except that, where the well has not been connected within such ninety (90) day period to pipelines or production tanks, Form WR-36 shall be filed no more than fifteen (15) days after such connection), Form WR-37, "Pre-Operation Certificate for Liquid Injection or Waste Disposal Well," and Form WR-38, "Affidavit of Plugging and Filling Well," shall be filed by the well owner or operator with the Chief. Such forms need not repeat well record information for any work (whether permitted or not) performed prior to and not part of the permitted work which said forms apply. Such forms shall correct or add to the well log and other records made and preserved at the well location by specifying the casing, treatment, or physical changes performed after completion of the permitted work, and the additional information or corrected information discovered, by electric logs or other means, after completion of the permitted work.

12.2.b. Deep Well Confidential Information; Filing of Well Logs:

12.2.b.1. Within ninety (90) days after the completion of drilling or recompletion of a deep well, the well operator shall file a copy of the well log and the electrical, radioactive or other similar conventional log if such logs have been performed. In addition, as soon as practicable, the well operator shall file a copy of drill stem test charts, formation water analyses, porosity, permeability or fluid saturation measurements, core analyses, and lithologic logs or sample descriptions as compiled; Provided, that no such additional information shall be required unless the well operator has compiled such information in the ordinary course of business. No interpretation of the data is required to be filed.

12.2.b.2. All information furnished with respect to a deep well marked "CONFIDENTIAL" shall be kept confidential for one (1) year following the date the information is required to be filed hereunder, unless the well operator gives the Chief written permission to release such information at an earlier date.

12.2.b.3. For good cause shown by the operator, the West Virginia Oil and Gas Conservation Commission may extend the period of confidentiality for one (1) year. The total period of confidentiality shall not exceed three (3) years.

12.3. Restriction of New Application - Except for good cause shown, no application required by W. Va. Code §22-6-6 may be filed for any work after the initial completion of a well unless all forms required by ~~sub~~section 12.2 of this rule have been completed and filed with the Office.

§35-4-13. Plugging, Abandonment and Reclamation.

13.1. Notice and Application to Plug and Abandon; Time of Filing.

13.1.a. The Notice of Intention to Plug and Abandon a Well required by W. Va. Code §22-6-23 shall conform to ~~subdivision~~ subsection 5.2.d above.

13.1.b. The well operator shall also submit copies of all logs in its possession upon specific request by the Chief, pursuant to W. Va. Code §22-6-6(c)(10)(ii).

13.2. In all cases, completed Forms WW-4(A) and WW-4(B) shall ~~in all cases~~ be filed with the Office and delivered to the coal operator, owner or lessee in the manner and within the time limits set out in ~~subsections (a), (b), and (c) of~~ W. Va. Code §22-6-23(a), (b), and (c) for the "notices" referred to therein.

13.3. The owner or operator of every well presumed to have been abandoned under the provisions of W. Va. Code §22-6-19 shall file Form WW-4 within sixty (60) days after such abandonment, unless the Office waives this requirement for good cause shown.

13.4. Work Order; Manner and Method of Plugging.

13.4.a. An applicant for a permit to plug a well shall set forth a detailed statement of the manner in which the work of plugging and filling such well is to be performed, including:

13.4.a.1. Location (by depth);

13.4.a.2. Kind and length of plugs to be used and the method chosen to insure that no gap exists between the bottom of the coal protection string of casing and the expanding cement plug thereunder;

13.4.a.3. Plans for mudding, cementing, and filling;

13.4.a.4. Plans for testing, and for shooting and removing casing; and

13.4.a.5. All other pertinent information regarding said plugging and filling, all of which shall be in compliance with W. Va. Code §22-6-24. The information shall be submitted on Form WW-4(B), "Application to Plug and Abandon a Well."

13.4.b. Any well operator proposing to plug or to clean out and replug a well in the manner specified by W. Va. Code §22-6-24(c) shall furnish the alternate cost estimates for performing such well work in the manner specified by W. Va. Code §22-6-24(d)(3) only in the event a coal operator, owner, or lessee has filed a Form OB-16, "Request by Coal Operator, Owner, or Lessee for Plugging Under W. Va. Code §22-6-24(d)."

13.5. Length of Plug - All cement plugs, other than those across coal seams, shall be at least one hundred (100) feet in length unless a variance from such a requirement is granted pursuant to section 18 below.

13.6. Retrieving Casing and Completing a Seal - The operator shall make reasonable efforts to cut and pull all recoverable casing (as determined by methods approved by the Chief or his authorized representative). Equipment used to pull recoverable casing shall be rated and rigged at or above one hundred fifty percent (150%) of the estimated weight of the heaviest string of recoverable casing, unless otherwise approved by the Chief or his authorized representative. Sufficient instrumentation shall be utilized to accurately indicate the pulling force applied. When casing cannot be pulled, the operator shall make reasonable attempts to perforate the pipe and squeeze cement behind the pipe in the vicinity of the freshwater zones to prevent the contamination of the fresh water zone.

13.7. "Verbal Permission" to Plug.

13.7.a. Verbal permission may be given pursuant to W. Va. Code §22-6-6-(c)(10) in the event the well to be plugged and abandoned is one on which drilling or working operations have been continuously progressing pursuant to authorization granted by the Office. Any verbal permission shall be given by the Chief, the supervising inspector, or any inspector who is available to supervise the plugging work. Unless such

verbal approval is given by the Chief, the well operator shall notify the ~~chief's~~ Office by telephone of such verbal approval no later than the next regular working day.

13.7.b. Unless the well operator proposes to plug the well in a manner allowed by W. Va. Code §22-6-24(d)(3), the well operator shall contact the coal operator or the coal owner or lessee who has filed a declaration under W. Va. Code §22-6-36, so as to provide the coal owner, operator or lessee the best feasible opportunity to make a plugging request under ~~subdivision~~ subsection 13.4.b of this rule.

13.8. Objections to Proposed Plugging - Objections to the proposed plugging of a well, whether by the Office or by any affected person, shall not be made except for violation or impending violation of the provisions of W. Va. Code §§22-6-23, 22-6-24 or any provision of this rule, ~~or of W. Va. Code "22-6-24, or section 13~~. The Chief shall promptly rule on such objections at a hearing to be held after providing no less than five (5) days notice to the applicant and objectors.

13.9. Plugging Method Request by Coal Operator or Coal Seam Owner:

13.9.a. The request by a coal operator or coal seam owner made pursuant to W. Va. Code §22-6-24(d) for a well to be plugged in any manner allowed by W. Va. Code §22-6-24(d)(3), rather than by the method provided in W. Va. Code §22-6-24(c), shall be made on Form OB-16, "Request by Coal Operator, Owner, or Lessee for Plugging Under W. Va. Code §22-6-24(d)."

13.9.b. The well operator or owner in his sole discretion may waive the provision in W. Va. Code §22-6-24(d) that such request "must be filed in writing with the Office prior to the scheduled plugging of the well." In the event of such waiver, the cost of undoing any part of the plugging work in order to comply with the coal operator's or coal seam owner's request shall be treated as a part of the cost of complying.

13.9.c. The Office shall make findings and issue an order in accordance with W. Va. Code §22-6-24(d)(2) by endorsement on or attachment to Form WW-4.

13.10. Statutory Affidavit - The affidavit authorized by W. Va. Code §22-6-23 and ~~sub~~section 12.2 of this rule shall be made on Form WR-38, "Affidavit and Filling Well." The affidavit shall be executed by at least two (2) parties doing the actual work, whether they are employees of a service company, a plugging contractor, or the well owner operator.

§35-4-14. Plugging Methods.

14.1. Materials Used in Plugging - The non-porous materials and cements mentioned in W. Va. Code §22-6-24 must be specified in the work order portion of Form WW-4(B), "Application to Plug and Abandon a Well." All cement, except where expanding cement is required, used in conjunction with plugging shall be American Petroleum Institute Class A Ordinary Portland cement with no greater than three percent (3%) calcium chloride and no other additives. All non-porous materials used in conjunction with plugging shall be at least six percent (6%) bentonite gel. If the operator furnishes satisfactory proof that different cement or non-porous material types are adequate, the Chief or his authorized representative may approve use of such different cement or non-porous materials. Materials and cements must be of a kind and quality accepted by the oil and gas industry, approved by the Office as suitable for the intended purpose, and which otherwise comply with all provisions of law and accepted standards. The Chief may approve use of non-standard material or cement.

14.2. Cleaning Out and Replugging Application; Objections; Order.

14.2.a. Application pursuant to W. Va. Code §22-6-24(e) to clean out and replug a previously plugged well shall be made by completed Form WW-4, "Notice of Intention and Application to Plug and Abandon a Well," and by the associated comments required to accompany Form WW-4 by ~~sub~~section 13.1 ~~to accompany Form WW-4~~ above.

14.2.b. Objections to a Form WW-4 application to clean out and replug a well, whether by the Office or by any affected person, shall not be made except for violation or impending violation of the provisions of W. Va. Code §§22-6-23, 22-6-24 or section 13 of this rule. If such an objection is filed or made, a hearing date shall be set and notice given by the Office by endorsement on the objection and mailed in accordance with W. Va. Code §22-6-24(e). The endorsement shall indicate the date, time and location of the hearing, identifying the well by reference to the API number.

14.2.c. The Office's order permitting or rejecting such application shall be endorsed on the Form WW-4 application and shall be mailed to the parties indicated in the method provided by W. Va. Code §22-6-24(e).

§35-4-15. Reports.

15.1. Annual Reports of Oil and Gas Production.

15.1.a. An annual report of oil and gas production for each well shall be filed with the Chief on or before the succeeding March 31. This report shall be on Form WR-39, "Report of Annual Production," or in such form as the Chief may approve. The report must identify and state the production from every oil and gas well not yet plugged and abandoned, regardless of the status of the well. The data shall be submitted by the well operator. Oil shall be reported in barrels, and gas shall be reported in thousand cubic feet.

15.1.b. Measurement of Oil - The volume of oil production shall be determined through the standard practices of common carriers in the State of West Virginia. The report on volume of oil shall be the same volume on which the royalty interest was determined and shall be acceptable "pipeline quality."

15.1.c. Measurement of Gas.

15.1.c.1. If a meter has been set for each well, the gas production for each well shall be reported, with each well identified by API number or, if no API number exists, by the operator's well number.

15.1.c.2. If common or master meter measurement is in use, the wells subject to common measurement shall be identified by API number, and production estimated for each such well shall be reported.

15.1.c.3. If calculated value is in use and no measurement of gas is available for an individual well or group of wells, the calculated volume of gas production using accepted engineering methods shall be reported, the wells so measured shall be identified by API number, and the production estimate for each such well shall be reported if such estimates are made.

15.1.d. Failure to submit an annual report of oil or gas as required by this rule or to provide proof of an existing use or a bona-fide future use under 35 CSR 5 shall constitute a rebuttable presumption that the well is abandoned by the operator.

15.2. Accidents - If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or his contractor shall give notice, stating the particulars of the explosion or accident, to the district oil and gas inspector or the Chief.

§35-4-16. Reclamation.

16.1. Reclamation Under the Construction and Reclamation Plan.

16.1.a. All proposed reclamation methods for construction of roads, drilling locations, ~~and~~ pits, and impoundments, if any, or alternative overflow prevention facilities, shall be submitted on Form WW-9 with the application for any permit required by W. Va. Code §22-6-6, except a permit to plug a well. Such proposed reclamation methods shall be approved by the Chief or his designate prior to the issuance of the permit, and all reclamation shall be done under the supervision of the Chief. With the consent of this Chief or his designee, the reclamation may be altered from that set out in said Form WW-9, if found necessary due to topography or other conditions not apparent upon initial submission and approval of the proposed reclamation methods.

16.2. Access Roads - All access roads shall be constructed and maintained so as to prevent excess sedimentation, maintain natural drainage areas and, if practicable, to direct or carry away from disturbed areas surface water run-off from undisturbed areas.

16.3. Drilling Sites - Drilling sites shall be constructed and maintained to prevent surface run-off carrying excessive sedimentation from the site, to confine all materials leaked or spilled as a result of drilling operations to the drilling site, and to prevent excess sedimentation by not placing in any stream any material moved or cut. Upon the plugging of a non-productive well, whether as a continuous operation with other permitted well work or otherwise, all cementing and other waste materials resulting therefrom shall be retained on the drilling site.

16.4. Wastewater Pits and Freshwater Impoundments - All field constructed wastewater pits and freshwater impoundments ~~which are used to contain wastewater~~ shall meet the following minimum requirements:

16.4.a. ~~Any~~ All pits and impoundments shall be constructed and maintained so as to prevent seepage, leakage or overflows and to maintain ~~its~~ their integrity.

16.4.b. Provisions shall be made for diverting surface water from the pits and impoundments.

16.4.c. All pits and impoundments shall have adequate freeboard to prevent overflow, and in no case shall the freeboard be less than two (2) feet. When an operator is unable to maintain adequate freeboard to prevent overflow ~~from any pit~~, the operator shall notify the district inspector ~~shall be notified by the well operator~~ and an additional pit (or alternative overflow facility) shall be constructed under the supervision of the Chief~~,~~. The additional pit or alternative overflow facility ~~which~~ shall also meet the requirements specified in this ~~sub~~section (16.4).

16.4.d. ~~If existing soil is not suitable to prevent seepage or leakage, other materials which are impervious shall be used as a liner for a pit.~~ All pits and impoundments shall have an impermeable synthetic liner to prevent seepage or leakage. ~~Any~~ All such liners shall be installed in such a manner as to protect the structural integrity of both pit or impoundment and liner.

16.4.e. Dikes and embankments associated with pits and impoundments shall be constructed of

compacted material and maintained with a slope that will preserve the structural integrity of such dike or embankment.

16.4.f. ~~Any unlined~~ All dikes and embankments ~~constructed of existing soil~~ shall be free of trees and other organic matter, large rocks, or any other material which could be reasonably expected to adversely affect the structural integrity of the dike or embankment.

16.4.g. Reclamation of the pits and impoundments shall not cause an overflow and/or discharge of materials to waters of the state.

16.4.h. All ~~drilling~~ pits, impoundments, and alternative overflow prevention facilities shall be constructed, maintained, and reclaimed so as not to be left in such condition as to constitute a hazard or to prevent any use of the surface ~~for agricultural purposes~~ that was available prior to the well activity after the expiration of the six (6) month or extended period for reclamation prescribed by W. Va. Code §22-6-30. The reclamation period for pits and impoundments permitted with multiple wells shall be calculated from the date the last well was drilled.

16.5. Surface and Underground Water Pollution.

16.5.a. Before commencing to drill any well for oil and gas, the well owner or operator shall make proper and adequate provision to prevent surface and underground water pollution.

16.5.b. When rotary drilling penetrates a formation known to contain substantial amounts of salt water, drilling will continue to the next casing point by drilling with mud, foaming, or other satisfactory methods for the purpose of isolating the salt water in the formation or preventing the discharge of salt water per se into a fresh water horizon or ~~above~~ to the surface of the ground. In the case of foaming, it is recognized that a certain amount of salt water mixed with the cuttings will be discharged above the surface of the ground, which will be contained in sump pits no larger than necessary for this purpose.

16.6. Notifications Prior to Commencement of Work - Prior to the construction of roads, locations, ~~and~~ pits, and impoundments for any permitted well work, the operator or his contractor shall notify the appropriate oil and gas inspector and allow the opportunity of inspecting and approving the construction and method of reclamation for all proposed areas to be disturbed in siting, drilling, completing or producing the well. In addition, the well operator or his contractor shall notify the appropriate district oil and gas inspector twenty-four (24) hours before actual permitted well work is commenced.

16.7. Requirements for Production and Gathering Pipelines.

16.7.a. This rule prescribes the minimum requirements for the safe and efficient installation of all production and gathering pipelines installed, relocated or replaced after June 9, 1983, which are not regulated by the United States Department of Transportation minimum safety standards applicable to pipelines.

16.7.b. The Chief reserves the right to direct the burial of any line installed under this rule to protect the public safety, by order issued after notice and hearing under the Office's rules.

16.7.c. Subject to the reservation in ~~subdivision~~ subsection 16.7.b. above, ~~of~~ production and gathering lines subject to this rule shall conform with the following:

16.7.c.1. Lines shall be buried where practical and reasonable, and practical and reasonable shall

be construed to mean lines should be buried in the following situations:

16.7.c.1.A. Where the line crosses agricultural land as defined in W. Va. Code §19-19-2;

16.7.c.1.B. Where an unburied line would prohibit use of a pre-existing private roadway or other means of access to a part of or all of surface land;

16.7.c.1.C. Where the line cannot more practically and reasonably be securely suspended to cross stream beds;

16.7.c.1.D. Where the line crosses a public road, in which event it shall be buried and otherwise installed in accordance with the rules of the public agency having jurisdiction over the road; and

16.7.c.1.E. Where the Chief decides prior to installation that burial would be practical and reasonable.

16.7.c.2. All buried lines shall be installed with a minimum of eighteen (18) inches of cover, except where solid rock is encountered in which case the minimum cover shall be six (6) inches;

16.7.c.3. Whenever a buried line crosses a pre-existing public or private roadway, the location of the line shall be clearly marked at the point of crossing by an appropriate marker; and

16.7.c.4. A suitable conductive wire shall be installed with plastic pipe to facilitate locating it with an electronic pipe locator; Provided, that any other suitable material or means for accomplishing this purpose may be employed.

16.7.d. Notwithstanding ~~subdivision~~ subsection 16.7.c of this rule, the surface owner(s) of record of any tract subject to the provisions of W. Va. Code §22-6-30(d) shall have the right to prescribe that a pipeline or specified parts thereof need not be buried. The prescription shall be on Form WR-75, "Permission Not to Bury Production or Gathering Line," unless it is included in the recorded right-of-way or lease under which pipeline is to be installed, which right-of-way or lease was granted by the then surface owner of record. Once executed and delivered to the person who proposed to install and operate the line, the prescription may not be revoked by any subsequent surface owner(s) of record.

16.7.e. This rule shall not be construed to prohibit a surface owner from preparing a safe crossing of a pipeline for a new means to access of another part of his tract.

§35-4-17. Preventing Waste.

17.1. Equipment - All well owners or operators, contractors, drillers, pipeline companies, or gas distributing companies producing or transporting oil or gas for any purpose shall use every possible precaution in accordance with accepted and approved methods to prevent waste of oil or gas and to prevent the pollution of the waters of the state in drilling and producing operations or in transporting or distributing such products and shall not wastefully utilize oil or gas or allow the same to leak or escape from natural reservoirs, wells or pipelines.

17.2. Commercial Well Properly Equipped - Whenever oil or natural gas in commercial quantities, in a well-defined oil or gas bearing stratum, known to contain oil or natural gas in such quantities, is encountered in any well drilled for oil or gas in this state, all such strata shall be adequately protected from infiltrating waters.

17.3. Protection of High Pressure Wells - On all wells where high pressure and large volume can be reasonably expected, properly working pressure blowout preventer equipment shall be used on the inner string of casing at all times. When the inner string of casing has been placed in the well and cemented in, the casing and blow-out equipment (both blind and pipe rams or their equivalent) shall be installed and tested by operation and pressure to a minimum pressure that is commensurate with the objective formation pressure before drilling is continued.

17.4. Preparation for Drilling In - Equipment for conserving oil and gas shall be provided before drilling in. In all proved or well-defined oil or gas fields, or where it can be reasonably expected that oil or gas in commercial quantities will be encountered, adequate preparations shall be made for the conservation of oil or gas before drilling any well.

17.5. Multi-Zone Production - So far as it is practical to do so, gas being produced at a high pressure should be separated in the well from that being produced at a substantially lower pressure by means of casing, tubing, casing heads and packers, in order to eliminate the flow of high pressure gas into the low pressure sands.

17.6. Drilling Deeper - Nothing in this rule shall be construed to prevent or discourage drilling deeper in search for oil or gas in any well.

§35-4-18. Variances.

Upon request, or upon his own initiative, the Chief may grant a variance from any other requirements of this series upon a showing by an operator that alternative practices will satisfy the requirements of the West Virginia Code and exhibit sound engineering practices. Prior to taking final action to grant or deny such a variance, the Chief shall provide notice of his proposed action to the public and to the surface owners of record and any coal owner, operator or lessee and provide all such persons with an opportunity to comment on such a proposal.

§35-4-19. Water Supply Testing.

19.1. Testing Obligations and Rights.

19.1.a. At the request of the owners of record of the surface tract as defined in W. Va. Code §22-6-9 or an occupant of land within one thousand (1,000) feet of the proposed well, the operator shall sample and analyze, in accordance with this section, water from any wells or springs located within one thousand (1,000) feet of the proposed well that is actually utilized by such owner or occupant for human consumption, domestic animals, or other general use.

19.1.b. If no request is made of the operator pursuant to the previous subsection, the operator shall sample and analyze, in accordance with this section, water from any one known and existing well or spring within one thousand (1,000) feet of the proposed well. If more than one such well or spring exists, the operator shall select for sampling and analysis the one well or spring that, in the operator's judgment, has the highest potential for being influenced by the operator's well work.

19.1.c. If for any reason the operator is unable to sample and to analyze water from any such water wells or springs within one thousand (1,000) feet of the operator's proposed well, the Chief may require the operator to sample and to analyze, in accordance with this section, water from one existing water well or spring located between one thousand (1,000) and two thousand (2,000) feet from the operator's proposed well.

19.1.d. At an operator's discretion, any or all water wells or springs within one thousand (1,000) feet of the operator's proposed well may be sampled and analyzed in accordance with this section.

19.2 Notice.

19.2.a. Surface Owner - The operator shall give notice to the owner of record of the surface tract (as defined in W. Va. Code §22-6-9) of the right of the user who is either an owner or occupant to request the operator to sample and analyze a well or spring in accordance with ~~subdivision~~ subsection 19.1.a of this ~~section~~ rule. The operator shall be deemed to have satisfied this requirement if notice is provided by the same methods utilized in conjunction with the permit application.

19.2.b. Generally - The operator shall make a reasonable attempt to give additional notice of the right to request the operator to sample and analyze a well or spring in accordance with ~~subdivision~~ subsection 19.1.a ~~of this section~~ above. The operator will be deemed to have satisfied this requirement if notice is provided by any of the following methods:

19.2.b.1. By personal service or by posting notice at the entrance to any dwellings located within one thousand (1,000) feet and at any other locations within one thousand (1,000) feet of the operator's proposed well where the use of such water wells and springs is conspicuous;

19.2.b.2. Mailing notice to dwellings located within one thousand (1,000) feet of the operator's proposed well and posting at any other locations within one thousand (1,000) feet of the operator's proposed well where the use of such water wells and springs is conspicuous; or

19.2.b.3. By any other means reasonably calculated by the Chief to provide adequate notice to the occupant/user.

19.2.c. Form - The notice provided by the operator in accordance with this section shall be in a form approved by the Chief, which, at a minimum, shall contain a statement of the user's right to request sampling and analysis, advise the user of his or her independent right to sample and analyze any water supply at the expense of the user, advise the user whether or not the operator will utilize an independent laboratory to analyze any sample, and advise the user of the availability through the Chief of a list of laboratories.

19.2.d. Timing - For all wells, such notice shall be given at least forty-eight (48) hours prior to the commencement of well drilling. For well drilling permitted after August 1, 1993, the operator shall provide such notice prior to the time of the filing of any permit application with the Chief.

19.2.e. Filing with the Chief - At the time of the filing with the Chief of the permit application for well drilling, the operator shall file with the Chief a statement describing whether any such users were identified and the manner in which any such users were provided with notice.

19.3. Sampling and Analysis.

19.3.a. Approved Methods - The operator shall collect and analyze samples in accordance with methods approved by the Chief or as set forth at 40 CFR Part 136.

19.3.b. Parameters - The operator shall analyze samples for the following parameters:

19.3.b.1. pH;

19.3.b.2. Iron;

19.3.b.3. Total dissolved solids;

19.3.b.4. Chloride;

19.3.b.5. Detergents (MBAS); and

19.3.b.6. Any others parameters as determined by the operator.

19.3.c. Laboratories - The laboratory utilized by the operator shall be approved by the Chief as being capable of performing sample analyses in accordance with this section.

19.3.d. Distribution of Results - The operator shall, no later than thirty (30) days after receipt of such sample analysis, provide the results of such sample analysis in writing to the Chief and to any of the users who may have requested such analysis in accordance with this section.

19.3.e. Certification of Results - The submission of analytical results on behalf of the operator pursuant to ~~subdivision~~ subsection 19.3.d. shall be made by a responsible operator representative or contractor knowledgeable of and responsible for the sampling and analysis of such samples, who shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

19.4. Operators Right of Entry.

19.4.a. After notice as required by this section, the operator (or any other contractor or laboratory directed by the operator to collect samples of water for analysis ~~by this section~~) may enter onto land upon which a water well or spring is located to conduct sampling as authorized by ~~sub~~section 19.1 above. This right of entry may be exercised for this purpose without the permission of the landowner or water or spring users.

19.4.b. If any owner of the land or user of the water well or spring protests or acts to block the right of entry, then the right of entry may be enforced by a court with jurisdiction to enter an injunction regarding the land upon which the source or supply is located. However, if any person acts to block the right of entry provided herein, the operator is not required to enforce this right of entry and shall not be liable for any penalty or loss of rights, privileges, or permits based on the failure to exercise the right of entry and obtain the water sample otherwise required by this section.

19.4.c. If the operator or contractor does not enter onto land and obtain a water test because of a protest or action to block the operator's or contractor's entry, the protest or action to block entry shall be admissible as evidence in an action between the operator and any landowner or water well or spring user in which the results of the test would have been relevant.

19.4.d. The operator is liable for any reasonable actual damages done other than normal wear and tear of the property while gathering the sample required by this section. This provision does not limit other provisions of the law.

§35-4-20. Groundwater Remediation.

20.1. Where the facilities or activities of an operator cause or contribute to the concentration of a certain constituent in groundwater that exceeds standards of purity and quality for groundwater promulgated by the state Environmental Quality Board pursuant to W. Va. Code §22-12-5, every reasonable effort shall be made by the operator to identify, remove, or mitigate the source of such contamination. Within thirty (30) days following written request by the Chief, the operator shall submit to the Chief a groundwater remediation plan to strive, where practical, to reduce the level of contamination over time to support drinking water use. Such a plan shall include such groundwater monitoring as may be necessary to demonstrate the effectiveness of the plan.

§35-4-21. Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5,000) Barrels.

21.1. All pits and impoundments with a capacity greater than five thousand (5,000) barrels used in association with an oil and gas operation, whether permitted or not, shall be constructed only in locations appropriate for the storage of water, including wastewater, and shall be designed, constructed, located, maintained, and used in accordance with this rule and in such a manner as to minimize adverse environmental impacts and to assure safety to the public. Notice of construction of all such pits and impoundments shall be provided to the Office prior to construction. Such notice shall identify the location and dimensions of the pit or impoundment. The Office shall have the authority for inspection of these sites and the enforcement of this rule.

21.2. Design and Construction Requirements. – All such pits and impoundments shall:

21.2.a. Be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer;

21.2.b. Provide adequate freeboard of no less than two (2) feet to resist overtopping by waves or sudden increases in volume and to provide adequate slope protection against surface erosion and sudden drawdown; and

21.2.c. Have a stable foundation during all phases of construction and operation and be designed based on adequate and accurate information on the foundation conditions.

21.2.d. For increased safety, incorporate lifelines and perimeter fencing.

21.3. In constructing the dike or embankment, the operator shall remove all topsoil from the foundation, install cutoff trenches where necessary to ensure stability, provide for proper compaction and ensure against excessive settlement by excluding sod, roots or frozen soil from the embankment. Permanent vegetative cover, free of brush and trees, shall be established on all dikes and embankments.

21.4. A pit or impoundment that is constructed in such a manner that it (a) Rises twenty-five (25) feet or more above the natural bed of a stream or watercourse as measured from the downstream toe of the embankment and does or can impound fifteen (15) acre-feet or more of water; or (b) Rises six (6) feet or more

above the natural bed of a stream or watercourse as measured from the downstream toe of the embankment and does or can impound fifty (50) acre-feet or more of water is, by definition, a dam and is thereby subject to the provisions of the West Virginia Dam Control Act, W. Va. Code § 22-14-1, et seq. and shall be exempt from the requirements of this rule.

21.5. Any impoundment that does not meet the criteria of section 21.4 above and that is intended to be left permanent shall meet the requirements set forth by the United States Department of Agriculture's Natural Resources Conservation Service "Conservation Practice Standard – Ponds" (Code 378). No pits may be left permanent.

21.6. Inspections.

21.6.a. After construction and prior to the placement of any fluid, all pits and impoundments with a capacity of greater than five thousand (5,000) barrels, shall be inspected by a West Virginia registered professional engineer to ensure compliance with the certified design and construction plan. If the inspection reveals that the pit or impoundment has been constructed in accordance with the plan, the professional engineer shall certify that in writing to the Chief. Placement of fluid in the pit or impoundment shall not begin until the certification has been filed with the Chief.

21.6.b. All such pits and impoundments containing fluid must be inspected every two (2) weeks and after all significant rain events of two (2) inches or more in a six (6) hour period, for the life of the pit or impoundment. Such inspection must be conducted by a company representative experienced in pit and impoundment construction. A company official shall certify to the Office monthly that the inspections have been conducted. If an inspection discloses a potential hazard, the company shall inform the Office of the findings and of the emergency procedures implemented for public protection and remedial action within twenty four (24) hours of the inspection.

APPENDIX A

The symbols shall be as follows:

New Drilling Location: - 

New Fracturing or Stimulating Location: -  F/S

Cancelled Application or Permit: -  CNC

Oil Well: - 

Gas Well: - 

Dry Hole: - 

Liquid Injection Well: -  LI

Waste Disposal Well: -  WD

Abandoned Well: - 

BEFORE THE WEST VIRGINIA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF:

PROPOSED 2010 RULES
35CSR4 - Related to
Oil and Gas and Other Wells

TRANSCRIPT OF PROCEEDINGS had or testimony adduced in the above-entitled matter, on the on the 14th day of July, 2009, commencing at 6:36 p.m. and concluding at 7:03 p.m., at 601 57th Street, S.E., Charleston, Kanawha County, West Virginia, pursuant to notice to all interested parties.

BEFORE: KATHY COSCO
Public Information Office.

ORIGINAL

NANCY MCNEALY
CERTIFIED COURT REPORTER
Post Office Box 13415
Charleston, West Virginia 25360-0415
(304) 988-2873 FAX (304) 988-1419

I N D E X

MS. COSCO: Good evening. I'm Kathy Cosco. I'm with the West Virginia Department of Environmental Protection's Public Information Office, and I'd like to welcome you to the public hearing on proposed rule changes to 35CSR4, related to oil and gas and other wells.

Revisions to this rule include updating the permit fees, which were changed by statute in 2005, cleaning up the requirements for pit and impoundment construction, and adding a new section (§21) that sets forth requirements in addition to those already existing in §16.4 for constructing pits and impoundments that exceed a certain size. Technical revisions and corrections are also made throughout.

I've already made sure that everybody is signed in. If you have written comments, please provide them to me when you speak, or at the close of this hearing, and if everyone is ready, we would now open for comments. The person to sign in who wishes to speak is George Monk. George, would you like to come up front.

MR. MONK: This is Molly Schaffnit. We've done this together. We have some questions that the state we feel needs to provide before it goes ahead. We'd like to know the state's reason for not requiring a permit for each pit. We'd like to know the state's reasoning for not

requiring a permit for each dewatering impoundment that's we believe in §21.4 & 5. We'd like to know if the state is working on a revision of the General Water Pollution Control Permit. We would like to know how the size of a 5,000 barrel pit is determine. Is it by volume including freeboard?

We'd like to know the state's reasoning that a pit of 5,000 barrel capacity should require a professional engineer's certification and special requirements as in §21 and a pit of 4,980 barrels would not. We'd like to know the state's reasoning for the necessity of breaking pit regulations into two parts. We believe that §16.4 and §21 should be combined into one pit section.

The main point we have with the pit regulations as they exist is an operator can drill a well 200 feet from a house, as required by law, put the pit in the front yard of the house and land apply in the back yard. There's nothing in the permit or the regulations to prevent that. We believe that there needs to be a distance between the bottom of the pit and ground water. We believe there needs to be a distance between a pit and a municipal water supply or domestic water supply, the same for surface water bodies like a river. There's no regulation as it is

now.

The permit that that regulation allows construction on fill soil. We believe that should be disallowed or perhaps special requirements. We believe that all pits should have professional engineer certification, not just ones that are 5,000 barrels.

We believe all pits should have liners like the regulation requires but we believe that the liner type should be specified as to mil and thickness and a type like low linear density polyethylene or high density polyethylene. We believe that installation requirements should be stated either in the regulations or in the general permit or special permit. There's no real requirement for the width of the bank between the anchor trench and the pit itself, and that bank width is important in keeping the stability. It should be at least two feet.

The freeboard requirement both in §16.1 and in §21 is important to really support the state. In §21 it doesn't state that the freeboard is required at all times including if there's a break in the liner, you have to keep the freeboard two feet below the break in the liner or if there's a breach in the pit, you have to keep the freeboard two feet below the breach. We believe there should be a regular program of inspection for all pits not just the

ones that were 5,000 barrels. We believe the program can be varied according to pit size but we think that if the pits that have fluid, they should be checked on periodically.

There's no real requirements in the regulation for how the pit should properly be reclaimed and closed. We believe that if the materials being buried in the liner, the liner should be wrapped over it and another piece of liner material placed over that and then there should be at least three feet of cover. The surfaces should be contoured so there's no surface ponding of water and then it should be properly planted with vegetation. All pits should have a permanent marker and a deed notice.

The Federal Housing Authority will not insure the mortgage if there is a possibility there's a pit near the house -- they won't insure a house if a well being drilled is within 300 feet -- the house is within 300 feet of the edge of the well site, not 200 feet like the state allows. So we believe there should be a permanent marker much like the markers used for wells three feet high and then also deed notice.

Outside of the pit regulations, we have other parts that we thought need worked on. We believe that the "waters of the state" should be defined in Section

2 "Under Definitions". It's really vague. I don't really know myself what it means. I got a definition from another state.

We believe that there should be separate permits for each pit and for dewatering. When this company is dewatering from a river, the permit could be free, but I think the state should know where it's happening and how much water is going out. If there's actually an impoundment being constructed or some type of structure for collecting water, we believe that a permit should be required.

The state requires identification marking on all wells in 5.5. The well sites we've looked at only a third have not had that, plugged or active wells, and that's a violation. The state needs to make sure the operators know that. We believe the well records submitted to the state that the material safety data sheet information for all the chemicals used for drilling, fracturing or workover should be given to the state so they can have a database of chemicals that could possibly come in contact with ground or surface water.

The reclamation section 16 really needs a lot of work. The Erosion and Sediment Control Field Manual is woefully out of date, that needs to be revised. Water

sampling, the state should require operators to furnish the results of the sampling before a well is drilled and after and he should have publically available database showing the depth of the well, what the constituents were, the concentrations and the date, so that researchers can find out the history of the effects of drilling in an area or that ideally land application or a pit permit would require some sort of knowledge of what the groundwater is in the area and this would help. Thank you.

MS. COSCO: Okay, Don Garvin.

MR. GARVIN: Thank you, I'm Don Garvin, Legislative Coordinator for the West Virginia Environmental Council and nine years that I've been Legislative Coordinator for the Environmental Council, I've never had to give comments on oil and gas operations, an industry that I worked in for 20 years prior to this. So this decision to involve myself in this came personally with great consideration, but I believe that the comments that a coalition has put together and presented to DEP on this rule are fair and I believe that they are conditions that can be met by the industry without tremendous additional costs. I support natural gas drilling in West Virginia and that's a personal comment.

The comments that I've provided to the

Public Information Officer tonight have also been submitted electronically. These comments were put together by representatives of the following organizations -- most of whom are e-council, if not all, are e-council members -- The West Virginia Rivers Coalition, West Virginia Surface Owners Rights Organization, West Virginia Citizen Action Group, the West Virginia Environmental Council, West Virginia Highlands Conservancy and the West Virginia Chapter of the Sierra Club.

In general, we support all of the proposed changes that have been written into the rule, strongly support, and we don't think they go far enough, however, and we've got several suggestions in that regard. It has been more than 25 years since any significant changes were made to West Virginia's drilling rules and with that in mind, the changes we suggest mostly don't apply to the current rule but to the changes necessary to deal with the new Marcellus shale operations which are huge in scope, huge in their impact on water resources and totally different in technologies that have been used and regulated by the Department in the past.

Let me state, first off, that this is not just a West Virginia, although we're addressing the West Virginia rule. Because of shale development, the shale

drilling nationwide, there is increased interest in the environmental issues regarding oil and gas drilling in this country. West Virginia is merely a reflection of the concerns nationwide.

Let me start by saying we strongly support the proposed rule change. I had it written down, but it's the change requiring a synthetic liner. Most reputable and responsible owners have been using liners for years. That should be mandatory and we applaud DEP for making this long overdue change. However, with pits being buried all across the state and with no markers of where those pits were, we recommend that an additional step and that's the pit liners and the contents be removed and taken to an authorized off-site waste disposal facility before the pit is actually reclaimed.

We strongly support a section dealing -- the new section 35.4.21 concerning construction of pits and impoundments with a capacity of greater than 5,000 barrels. These are the Marcellus shale well pits and we believe this new section will help protect freshwater resources throughout the drilling process and will provide for more responsible reclamation and we have a number of additional items in that section we fully support, such as requiring a professional engineer design and certify plans for pits and

impoundments. These are much bigger structures than the drilling pits that were done in previous years. We support the requirement that pits and impoundments be inspected. We think drillers at the wellsite out to have an emergency plan for notification in case there's a hazardous pit break or spill that includes the surface owners and downgrade landowners.

The issue which gives us -- one of the two issues that give us the most concern are the size of these new frac jobs and this new technology and the first issue can't be addressed in this rule, but I hope that the agency is working with the Office of Water on this. Office of Oil and Gas is working with the Office of Water on this and that's the issue of water withdrawal. These frac jobs now involve huge amounts, huge volumes of water and it has to come from somewhere and our fears that currently in West Virginia there is no regulatory requirement, there's no permit needed and a lot of these -- a lot of oil and gas wells are drilled in rural areas. Some of them in or near our headwater streams. We're concerned about dewatering of our freshwater resources and I know that the office has tried to address this somewhat through a cautionary guidance. I think we're going to find that that's adequate and we can't wait four more years for the Office of Water

to develop its water resources protection plan for the state, so that is half of the problem.

The other half is frac fluids and the flow-back from normal frac jobs goes into a pit and it's treated and land applied; that liquid is treated and land applied and that's worked well for the regular vertical shallow well drilling in West Virginia over the years. These larger pits or larger frac jobs, the volumes are just so high that we need a new process and we recommend as in a process that's used in other states, some other states, called the "Closed Loop System" whereby the frac water is brought in in trucks and taken out in trucks and never put in a pit or if it's put in a pit, it's only put there temporarily. We believe that frac water is too large in volume to land apply and we think the agency should look further at that.

Other people will say things tonight. I think that about covers it. I realize that many of our comments are not addressed in the agency's proposed changes; however, we want them out there for public discussion. Thank you.

MS. COSCO: The next person who indicated he wished to speak is Charles Bird.

MR. BIRD: We have submitted our comments and

will leave them as submitted.

MS. COSCO: Okay.

MR. BIRD: Thank you.

MS. COSCO: And then I have some here who didn't indicate at all, so if I'm skipping you, please let me know. The next person indicated is Beth Little.

MS. LITTLE: I'm Beth Little. I'm the member of the Sierra Club that signed on to the comments that Don Garvin just presented and talked about. First of all, I want to say I'm really glad there's a Department of Environmental Protection, and I'm aware that the DEP is short of the resources necessary to deal with probably what they need to take care of now much less the increase with the possible Marcellus shale drilling.

If it were in my power to do something about that, I certainly would. In fact, my suggestion was that the number of active permits be limited to a reasonable number that one inspector could manage times the number of inspectors that are currently working for the DEP. That was not part of our comments because it was thought that it was beyond the scope of what's being dealt with with this rule so that's my personal comment.

Mainly as you heard from Don, we focused the protection of our water. Energy is very important. We

need it and there's going to be increasing demand and there's a lot of interest in natural gas because of the concern about energy security from foreign sources, but water is vital. We have alternatives to energy. There's no alternative to water and we really do hope that the Office of Oil and Gas will work with Water Resources and do everything they can to protect our water. Thank you.

MS. COSCO: Our last person who indicated he wishes to speak is Matt Norpell.

MR. NORPELL: My name is Matt Norpell. I live down in Rock Creek in Raleigh County in the southern part of the state. I don't know how soon you all will be getting drilling in the Marcellus shale, but I thought I'd come and give my thoughts anyway cause there is a lot of natural gas drilling up there and it has had effects on our community and so I'd like to second everything that everyone said already. It's really great comments and really hope focus the absolute transparency of chemicals that are used in there. The community has a right to know everything that's going into the ground and everything that is coming back out of the ground and potentially getting with the groundwater and not coming with the groundwater. We have had enough mysterious groundwater cases down there already and also I'd like to say enforcement is absolutely

necessary.

You're not allowed to allowed to dig out a riverbed and suck all the water out, but I've seen gas wells do it and the DEP doesn't catch it and it's only caught when people like myself happen upon it and say that doesn't look quite right and so I think the DEP needs to seriously beef up its inspection team and again, like I said, not permit more than it has capacity to permit and, of course, that goes for all DEP, the whole DEP not just oil and gas and so I think that's about it since the first ones covered everything so well and thank you and also say thank you to the DEP for making a first step in the pit regulations.

MS. COSCO: Is there anyone who has a desire to speak who hasn't indicated on the sign-in sheet? Okay, there being no further comments, this concludes the public hearing on proposed changes to 35CSR4, related to oil and gas and other wells.

The public comment period ends tonight. The agency will review all comments and prepare a written response.

(WHEREUPON, the hearing was concluded.)

BEFORE THE WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF WEST VIRGINIA,
COUNTY OF KANAWHA, to wit:

I, **NANCY MCNEALY**, Certified Verbatim Court Reporter and Commissioner of West Virginia, do hereby certify that the foregoing is, to the best of my skill and ability, a true and accurate transcript of all the proceedings as set forth in the caption hereof.

Given under my hand this 17th day of July, 2009.

My commission expires November 26, 2010.

Certified Verbatim Reporter
Commissioner of West Virginia

Written Comments Filed in Response to Proposed Changes to Legislative Rule, Title 35, Series 4 With Corresponding Responses

Comment A through comment N below were filed by Lynn Hunter, Janes Lanham, Jerry & Julie McKeen, Mark Blumenstein, Michael Choban, Davei Ruddiger, Karen Garrett, Lynn Welsh, Betty Rivard, Robert Gronan, Palela Ruediger, Ginger Must, and Jim Snyder.

COMMENT A:

Section 16.4.d of the proposed rule requires all pits and impoundments to have a synthetic liner to prevent seepage or leakage. Thank you for a long-overdue change.

RESPONSE A:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT B:

Proper reclamation of all pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities. Drillers should not be allowed to bury the liners and the waste contained in them on a surface owner's land. The current practice of burying pit waste sterilizes the area from future construction and other uses.

RESPONSE B:

This comment is outside the scope of the proposed revisions.

COMMENT C:

The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium (most creek and river valleys).

RESPONSE C:

All construction plans must be approved by the Office of Oil and Gas. The Office can and will reject pit locations in sensitive areas where it's believed that the ground or surface water can't be protected.

COMMENT D:

We fully support the addition of section 35-4-21 "Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels." This new section will help protect freshwater resources throughout the drilling process, and will provide for more responsible reclamation.

RESPONSE D:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT E:

We support the requirement that a registered professional engineer design and certify the plans for and inspect all pits and impoundments before the pit is used.

RESPONSE E:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT F:

We support the requirement that all pits and impoundments be inspected every three days for the life of the structure.

RESPONSE F:

The DEP believes that due to the proposed requirement in section 21.2.a., the inspection frequency under section 21.6.b. can be modified. The rule will be modified as stated in response AAAA.

COMMENT G:

DEP should require prior notice be given to the surface owner and all landowners down gradient before construction of all pits and impoundments.

RESPONSE G:

Owners of surface property for which permitted work is to be undertaken and whose property is to be disturbed, is currently required to be noticed as part of the permit application. The DEP believes that prior notice regarding construction of pits and impoundments to all down gradient landowners is unworkable and unnecessary.

COMMENT H:

DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit failure.

RESPONSE H:

The DEP does not believe that this information is necessary for the "conventional" pits. However, for those covered under section 21, if a potential hazard is disclosed during an inspection, the company shall, inform the Office of Oil and Gas of the hazard and of the emergency procedures implemented for public protection and remedial action.

COMMENT I:

If a potential hazard is discovered during an inspection, it should be reported immediately to DEP and appropriate emergency agencies.

RESPONSE I:

The proposed revisions in 21.6.b., do require notice of potential hazards to the Office of Oil and Gas subsequent to a company inspection. The language will be changed to require a notice within 24 hours of the inspection and of the emergency plan implemented. See also response TTT.

COMMENT J:

Sections 16 and 21 should apply to all pits and impoundments used in association with an oil or gas operation, including off-site pits or impoundments that supply water to or take water or waste from wells.

RESPONSE J:

Sections 16 and 21 apply to offsite pits and impoundments which meet the criteria in those sections.

COMMENT K:

West Virginia has no requirement for disclosure, let alone regulation, of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals, in addition to requiring their disclosure.

RESPONSE K:

This comment is beyond the scope of the proposed revisions.

COMMENT L:

West Virginia does not require disclosure of the levels of salt and naturally occurring radioactive materials (NORMs) that contaminate "frac" water while it is underground, before it flows back to be disposed of. This rule should require testing and disclosure of the flow-back water contents, in addition to monitoring and reporting the flow-back volumes.

RESPONSE L:

This comment is beyond the scope of the proposed revisions.

COMMENT M:

This rule should require that the flow-back water from all large volume "frac" jobs (greater than five thousand (5,000) barrels) be captured and transported off-site to authorized disposal or treatment facilities.

RESPONSE M:

This comment is beyond the scope of the proposed revisions.

COMMENT N:

A more complete analysis of the constituents of drinking well water would provide both landowners and operators greater confidence in whether or not the quality of a landowner's water well changed during or after drilling. Therefore, in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride). At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner.

RESPONSE N:

This comment is beyond the scope of the proposed revisions.

COMMENT O:

Lynn Hunter stated that the construction and reclamation plans for oil and gas wells should show where the pipeline is going to go and how it is going to be reclaimed

RESPONSE O:

This comment is beyond the scope of the proposed revisions.

COMMENT P:

Betty Rivard stated that there should be a provision for monitoring of water downstream, not just on the property of the landowner where the well is located.

RESPONSE P:

This comment is beyond the scope of the proposed revisions

COMMENT Q:

Karen L. Garrett stated that it is not sufficient to allow the drillers when making their application to only notify the one name identified on the sheriff's tax ticket. Since the driller is required to do a ten-year search of the Grantor index, it is also not sufficient to allow them to only notify the other surface owners when the total number does not exceed three. Likewise, the driller should be obligated to notify the adjoining surface owners. The same is true of the notification regarding testing of the water prior to fracturing a well. However, the notice prior to fracturing should NOT be a mere 48 hrs notice. A minimum of TEN days notice should be required. This would not be onerous on the drillers, since they will have planned the timing of their activity for months and years prior to sending the notice.

RESPONSE Q:

These comments are beyond the scope of the proposed revisions.

COMMENT R:

Robert Gronan stated that the liner requirement should be in addition to clay or other impervious soil liner and not be allowed to be the only barrier placed over porous soil.

RESPONSE R:

The liner is required under the proposal, section 16.4.d., to be installed in such a manner as to protect its structural integrity.

COMMENT S:

Robert Gronan stated that reclamation of all pits and impoundments should include removal of all wastes including liners to off-site approved waste disposal facilities.

RESPONSE S:

See response B.

COMMENT T:

Robert Gronan state that the DEP should require notice be given to surface owners down gradient prior to construction of all pits and impoundments.

RESPONSE T:

See response G.

COMMENT U:

Robert Gronan stated that the DEP should require disclosure of all chemicals proposed to be added to water used to fracture a well. Known carcinogens, such as benzene, should be prohibited.

RESPONSE U:

See response K.

COMMENT V:

Robert Gronan stated that analysis of well and spring water on lessor's and adjacent properties should be required before and after drilling. This should include salts and all chemicals added to the injection water for fracing.

RESONSE V:

This comment is beyond the scope of the proposed revisions.

COMMENT W:

Michael Choban stated that reclamation of pits and impoundments should include removal of all solid wastes, including the liners, to authorized off-site waste disposal facilities. Drillers should not be allowed to bury the liners and the waste contained in them on a surface owner's land. The current practice of burying pit waste sterilizes the area from future construction and other uses.

RESPONSE W:

See response B.

COMMENT X:

Michael Choban stated that the rule has no limitations on pit location with respect to ground or surface water. DEP should develop location requirements for pits to prevent contamination of freshwater and to protect human health and the environment.

RESPONSE X:

See response C.

COMMENT Y:

Michael Choban stated that the construction and reclamation plans for oil and gas wells should show where the pipeline is going to go and how it is going to be reclaimed.

RESPONSE Y:

See response O.

Comment Z:

Michael Choban stated that he supports the requirement that a registered professional engineer should design and certify pit plans and inspect all pits and impoundments before the pit is used.

RESPONSE Z:

See response E.

COMMENT AA:

Michael Choban stated that if a potential hazard is discovered during an inspection, it should be required to be reported immediately to DEP and appropriate emergency agencies.

RESPONSE AA:

See response I.

COMMENT BB:

Michael Choban stated that West Virginia has no requirement for disclosure and regulation of the chemicals that can be put into the water used to "fracture" a well. This rule should require that DEP regulate these chemicals and require their disclosure.

RESPONSE BB:

See response K.

COMMENT CC:

Lynn Welsh stated that reclamation must include removal of all solid wastes, including the liners, to an authorized off site waste disposal facility.

RESPONSE CC:

See response B.

Lynn Welsh stated that limitations on pit location, especially in karst and alluvium soil, must be developed and implemented to protect surface & ground water as part of the new regulations.

RESPONSE CC:

See response C.

COMMENT DD:

Lynn Welsh stated that prior notice must be given to downhill residents before the location of a pit or impoundment is approved. DEP needs to set standards how far away downhill residents need to be notified. West Virginians typically don't hear about potential dangers until it is too late to prevent them. This should also include emergency plans from drillers to protect or notify downhill residents for problems during drilling.

RESPONSE DD:

See response G. In addition, under standard operations and based on past practices, the Office of Oil and Gas has not observed the need for downhill residents to be given notice of emergency plans during drilling.

COMMENT EE:

Lynn Welsh stated that West Virginia MUST have disclosure and regulation requirements for what chemicals are being used to "fracture" a well. The back-flow water also needs to be inspected with its disposal regulated in case of "out of norm" pollutants.

RESPONSE EE:

See responses K and L.

COMMENT FF:

Jeri Hunt stated that DEP should have siting requirements for pits to prevent contamination of freshwater and to protect human, aquatic and animal health. Pits should be restricted in karst and alluvium areas- most of our creeks and river valleys.

RESPONSE FF:

See response C.

COMMENT GG:

Hedda Haning stated that the rule should require complete public information on what goes into the ground for drilling and fracing; as well as what is drawn out of the ground including saline solutions and radiation contamination--including from natural sources. The rules should also give the DEP the right and capability of monitoring and regulating both.

RESPONSE GG:

See responses K and L.

COMMENT HH:

Lonnie Ward stated that it is important that the rule provide for the isolation of all waste water, pit liners and equipment to be disposed of in an approved manner off-site from the pits. To reduce the possibility of ionic contamination of soil or water, ALL water going INTO and FROM these wells must be contained and disposed of at the facility approved for the pit liners and equipment.

RESPONSE HH:

This comment is beyond the scope of the proposed revisions.

COMMENT II:

Lonnie Ward stated that drinking water wells and sources of municipal water supplies, be sampled before, during, and at the conclusion of hydraulic fracturing.

RESPONSE II:

This comment is beyond the scope of the proposed revisions.

COMMENT JJ:

Allen Johnson stated that all fracing fluids should be qualitatively analyzed. The ingredients should be on file and accessible to regulatory oversight.

RESPONSE JJ:

See responses K and L.

COMMENT KK:

Allen Johnson stated that all contaminated water (as in holding ponds) be transported to offsite approved treatment facilities.

RESPONSE KK:

See response HH.

COMMENT LL:

Allen Johnson stated that groundwater recharge capacity should be established at any drilling site so that water quantity is not reduced for streams and neighboring wells.

RESPONSE LL:

This comment is beyond the scope of the proposed revisions.

COMMENT MM:

Allen Johnson stated that baseline water testing in adjacent wells should be performed prior to drilling sufficient to establish legal culpability if a well later becomes contaminated.

RESPONSE MM:

This comment is beyond the scope of the proposed revisions.

COMMENT NN:

George Garton stated that he encouraged adoption of the proposed changes.

RESPONSE NN:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT OO:

John and Sally Snyder stated that under section 5.5, after reclamation, pit locations should be marked and contain certain information regarding the construction and purpose of the pit and contact information.

RESPONSE OO:

This comment is beyond the scope of the proposed revisions.

COMMENT PP:

John and Sally Snyder stated that under section 9.2.c., plats should contain surveyed route of gathering pipelines across surface owners land.

RESPONSE PP:

This comment is beyond the scope of the proposed revisions.

COMMENT QQ:

John and Sally Snyder stated that under 9.2.l.1. and 9.2.l.2, water wells and dwellings within 1000 ft. of the proposed well should be shown on the plat.

RESPONSE QQ:

This comment is beyond the scope of the proposed revisions.

COMMENT RR:

John and Sally Snyder stated that under section 10, bonds should be required for surface owner damages.

RESPONSE RR:

This comment is beyond the scope of the proposed revisions.

COMMENT SS:

John and Sally Snyder stated a hearing should be allowed for any party filing a comment or objection regarding a drilling permit.

RESPONSE SS:

This comment is beyond the scope of the proposed revisions.

COMMENT TT:

John and Sally Snyder stated that under 16.2., access roads should be constructed and maintained to prevent any sedimentation whatsoever.

RESPONSE TT:

This comment is beyond the scope of the proposed revisions.

COMMENT UU:

John and Sally Snyder stated that under 16.3., drilling sites should be constructed and maintained to prevent any runoff from the site, confine all materials in membrane lined containment areas, and to prevent all sedimentation by not placing, in any stream, any material moved or cut.

RESPONSE UU:

This comment is beyond the scope of the proposed revisions.

COMMENT VV:

John and Sally Snyder asked under 16.4.b.,who makes the plans and what are the plans for diverting of surface water from pits and impoundments.

RESPONSE VV:

The applicant is required to divert surface water from the pit or impoundment and be subject to inspection by the oil and gas inspector.

COMMENT WW:

John and Sally Snyder asked for the meaning in section 16.4.c., regarding the supervision of the Chief when constructing an alternative overflow facility.

RESPONSE WW:

"Supervision of the Chief" is existing language in the rule. This activity is under the authority of the Chief. In practice, the contacts, onsite coordination, and review will be through the field staff.

COMMENT XX:

John and Sally Snyder suggested adding the word "impermeable" to further define the liner in section 16.4.d.

RESPONSE XX:

The DEP agrees that this is the intent of the language and will add the word impermeable.

COMMENT YY:

John and Sally Snyder stated that section 16.7.c.1.A., should be amended to include all lands that pipelines are crossing.

RESPONSE YY:

This comment is beyond the scope of the proposed revisions.

COMMENT ZZ:

John and Sally Snyder stated that section 17 should include the issue of flaring.

RESPONSE ZZ:

This comment is beyond the scope of the proposed revisions.

COMMENT AAA:

John and Sally Snyder stated that under section 18, nothing beyond comments being made part of the file is achieved.

RESPONSE AAA:

This comment is beyond the scope of the proposed revisions.

Comment BBB through comment UUU below were filed by the West Virginia Rivers Coalition and joined by the WV Citizen Action Group, the West Virginia Highlands Conservancy, the Appalachian Center for the Economy and the Environment, the WV Surface Owners' Rights Organization, the West Virginia Environmental Council, and the West Virginia Chapter of the Sierra Club.

COMMENT BBB:

The West Virginia Rivers Coalition proposed the following changes:
Section 2.18. should be added to read:
"Fracing" shall mean the process of forcing material into a well under pressure in order to fracture the rock or shale in order to release gas.
Section 2.19. should be added to read:
"Frac flow-back" shall mean any fluids flowing back from a well before the well is put into production that contains the materials used in fracing a well.

RESPONSE BBB:

This comment is beyond the scope of the proposed revisions.

COMMENT CCC:

The West Virginia Rivers Coalition stated that many areas in the eastern counties of West Virginia have a karst geology. Drilling in karst presents special problems. Where there is karst geology, study should be done before permitting.

RESPONSE CCC:

This comment is beyond the scope of the proposed revisions.

COMMENT DDD:

The West Virginia Rivers Coalition stated that section 11.6. should be amended to read: Annual Inspection - The operator shall conduct an inspection at the surface of each unplugged well at which drilling has been completed for more than five (5) years. Such an inspection shall be conducted no less frequently than once each calendar year in a method approved by the Chief. Certification of the performance of such inspection, in a form approved by the Chief, shall be filed with the Office of Oil and Gas in conjunction with the operator's annual report as required ~~under~~ by subsection 15.1 below. Should the operator detect evidence of any leakage or other indications of casing integrity failure, the operator shall give notice to the Office of Oil and Gas within 24 hours and take such measures as may be appropriate to eliminate the leakage. The district inspector shall verify within 5 days that the leakage has been eliminated. If the leakage has not been eliminated, the Chief shall order the well to be plugged.

RESPONSE DDD:

This comment is beyond the scope of the proposed revisions.

COMMENT EEE:

The West Virginia Rivers Coalition stated that plugging operations are exempt from filing a full soil erosion and sediment control plan by W.Va. Code 22-6-6(d). The result has been that in some cases no re-seeding etc. is done at all. The operator should at least be required to show the state and the surface owner the instructions the operator should be giving to its employees or contractors for removing the well site and access road and reseeding/revegetating the land. The well site and access road should be removed unless one of the surface owners agrees that it not occur. If the road and site are to be left in place, only the proposed reseeding/revegetation should be included with the permit. The cost of plugging should be minimized in order to encourage plugging. The construction and reclamation plan should show where the pipeline is going to go and how it is going to be reclaimed.

RESPONSE EEE:

This comment is beyond the scope of the proposed revisions.

COMMENT FFF:

The West Virginia Rivers Coalition proposed the following changes to section 16.1.a.: All proposed reclamation methods for construction of roads, drilling locations, pipelines, pits and impoundments, if any, or alternative overflow prevention facilities, shall be submitted on Form WW-9 with the application for any permit required by W. Va. Code

§22-6-6, except a permit to plug a well. Form WW-9 shall include an estimate of the amount of acreage to be disturbed, the location of all pits at the drill site (with approximate dimensions of the drill site and pits), and the land application area if applicable. Drawings must be clear, concise and complete so that all parties understand the proposed activity. Such proposed reclamation methods shall be approved by the Chief or his designate prior to the issuance of the permit, and all reclamation shall be done under the supervision of the Chief. With the consent of this Chief or his designee, the reclamation may be altered from that set out in said Form WW-9, if found necessary due to topography or other conditions not apparent upon initial submission and approval of the proposed reclamation methods. Landowners shall be consulted prior to the approval of any alterations.

RESPONSE FFF:

This comment is beyond the scope of the proposed revisions.

COMMENT GGG:

The West Virginia Rivers Coalition proposed changes to section 16.1.b.:
When plugging a well a full reclamation plan is not required. However the proposal for deconstruction of the site and access road shall be included with the permit application unless deconstruction of the well site or access road or both is waived in writing by an owner of the surface. The application for the plugging permit shall also contain proposed re-vegetation.

RESPONSE GGG:

This comment is beyond the scope of the proposed revisions.

COMMENT HHH:

The West Virginia Rivers Coalition proposed the following changes to section 16.2:
Access Roads – All access roads shall be constructed and maintained so as to prevent ~~exceess~~ sedimentation, maintain natural drainage areas and to direct or carry away from disturbed areas surface water run-off from undisturbed areas.

Section 16.3. should be amended to read:

Drilling Sites – Drilling sites shall be constructed and maintained to prevent surface run-off carrying ~~excessive~~ sedimentation from the site, to confine all materials leaked or spilled as a result of drilling operations to the drilling site, and to prevent ~~excess~~ sedimentation by not placing in any stream any material moved or cut. Upon the plugging of a non-productive well, whether as a continuous operation with other permitted well work or otherwise, all cementing and other waste materials resulting therefrom shall be disposed of at a facility authorized to receive such material ~~retained on the drilling site~~.

RESPONSE HHH:

This comment is beyond the scope of the proposed revisions.

COMMENT III:

The West Virginia Rivers Coalition stated that they applaud that the Rule is finally amended to require liners of all pits and impoundments. This requirement is long overdue.

RESPONSE III:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT JJJ:

The West Virginia Rivers Coalition stated that the driller should be required to take drilling pit liners and the pit waste contained in them at the end of drilling to a landfill instead of burying them on a surface owners' land and sterilizing the area from future construction and other uses. Under current rule, the operator is not even required to place a marker or monument to show where the pit waste has been buried.

RESPONSE JJJ:

See response B.

COMMENT KKK:

The West Virginia Rivers Coalition stated that the rule has no limitations on pit location with respect to ground or surface water. DEP should develop sitting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium.

RESPONSE KKK:

See response C.

COMMENT LLL:

The West Virginia Rivers Coalition proposed the following changes to section 16.4.h.: All ~~drilling~~ pits, impoundments, and alternative overflow prevention facilities shall be constructed, maintained and reclaimed so as not to be left in such condition as to constitute a hazard or to prevent use of the surface for ~~agricultural purposes~~ any use

available prior to the well activity after the expiration of the six (6) month or extended period for reclamation prescribed by W. Va. Code §22-6-30. Following removal of all fluids, the remaining material and the liner shall be removed and disposed of through a facility approved for the receipt of those wastes. The reclamation period for pits and impoundments permitted with multiple wells shall be calculated from the date the last well was drilled.

RESPONSE LLL:

The DEP agrees with the comment to change "agricultural purposes" to "any use that was available prior to the well activity". The other suggested additional language was covered in comment JJJ.

COMMENT MMM:

The West Virginia Rivers Coalition stated that under section 16.4.i.,for an increased level of safety, pits and impoundments should incorporate lifelines and perimeter fencing. Additionally, as these sites are likely to have additional equipment during the drilling and completion of the well, operators must plan for adequate spacing of equipment and access to all areas of the site to assist in creating a safe working area.

RESPONSE MMM:

The DEP agrees with this comment for pits and impoundments under section 21. Language addressing lifelines and perimeter fencing will be added in section 21.

COMMENT NNN:

The West Virginia Rivers Coalition proposed the following changes in section 16.4.i.: For increased safety, pits and impoundments must incorporate lifelines and perimeter fencing. The fence must be at least four (4) feet in height and exclude livestock. The Office may require the operator to meet additional fencing requirements for the protection of wildlife in particular areas.

RESPONSE NNN:

See response MMM. Specific issues regarding wildlife should be addressed on a site specific basis.

COMMENT OOO:

The West Virginia Rivers Coalition proposed the following changes to section 16.6.: Notifications Prior to Commencement of Work – Prior to the construction of roads, locations, ~~and~~ pits, and impoundments for any permitted well work, the operator or his contractor shall notify the appropriate oil and gas inspector and allow the opportunity of inspecting and approving the construction and method of reclamation of all proposed

areas to be disturbed in siting, drilling, completing or producing the well. In addition, the well operator or his contractor shall notify in writing the appropriate district oil and gas inspector twenty-four (24) hours before actual permitted well work is commenced. In addition, the operator shall give prior notice to the surface owner before construction of all pits and impoundments.

RESPONSE OOO:

This comment is beyond the scope of the proposed revisions.

COMMENT PPP:

The West Virginia Rivers Coalition proposed the following changes in section 19.1.a.: ~~At the request of the owners of record of the surface tract as defined in W. Va. Code §22-6-9 or an occupant of land within one thousand (1,000) feet of the proposed well, t~~The operator shall sample and analyze, in accordance with ~~this section~~ W. Va. Code §22-6-9, water from ~~any~~ all wells located within one thousand (1,000) feet of the proposed oil or gas well ~~or~~ and any springs~~s~~ located within one thousand (1,000) feet of the proposed well that is actually utilized by such owner or occupant for human consumption, domestic animals, or other general use.

RESPONSE PPP:

This comment is beyond the scope of the proposed revisions.

COMMENT QQQ:

The West Virginia Rivers Coalition stated that under section 19.3., in addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride), as well as any other constituents of Marcellus flow-back that may serve as indicators of water contamination. DEP data from flow-back samples from a Marcellus well contained high concentrations of several constituents, not just iron and chloride (data attached). However, fracturing, drilling, or even site preparation and road building activities could cause changes in groundwater flowpaths, recharge zones, or the fracture system feeding a water well. A more complete analysis of the constituents of the well water would allow both landowners and operators greater confidence in whether or not the quality of a well changed subsequent to drilling.

At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner. Increases in sodium concentration in water used for human consumption are of great concern. Especially in consideration of the high rates of heart disease and hypertension suffered by West Virginians, increases in sodium concentration in well water used for human consumption could be deadly.

RESPONSE QQQ:

This comment is beyond the scope of the proposed revisions.

COMMENT RRR:

The West Virginia Rivers Coalition stated that under section 21 the DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit or impoundment failure.

RESPONSE RRR:

See response H.

COMMENT SSS:

The West Virginia Rivers Coalition proposed the following changes to section 21.1.: All pits and impoundments used in association with an oil and gas operation, whether permitted or not, shall be constructed only in locations appropriate for the storage of water, including wastewater, and shall be designed, constructed, located, maintained, and used in accordance with this rule and in such a manner as to eliminate adverse environmental impacts and to assure safety of the public. Notice of construction of all pits and impoundments shall be provided to the Office and the surface owner prior to construction. Such notice shall identify the location and dimensions of the pit or impoundment. The Office shall have the authority for inspection of these sites and the enforcement of this rule.

RESPONSE SSS:

See response OOO.

COMMENT TTT:

The West Virginia Rivers Coalition proposed the following changes to section 21.6.b.: All pits and impoundments containing fluid must be inspected every three (3) days for the life of the pit impoundment. Such inspection must be conducted by a company representative experienced in pit and impoundment construction. A company official shall certify to the Office monthly that the inspections have been conducted. If an inspection discloses a potential hazard, the company shall ~~promptly~~ inform the Office of the findings and of the emergency procedures formulated for public protection and remedial action immediately following the inspection, but no later than 24 hours following the inspection.

RESPONSE TTT:

The DEP agrees with this comment and will make the suggested change.

COMMENT UUU:

The West Virginia Rivers Coalition stated that a new section 22 should be added. The rule should require disclosure of the chemicals that are placed in the frac water in a place available to the public. The industry already has to supply Material Safety Data Sheets for the chemicals it transports, but they are impossible to find without asking the truck drivers for them, and the truck drivers should not be responsible for that. It is our understanding that the exact chemicals are not trade secrets, just the mixtures. And in any case, trade secrets should yield to the importance of public and environmental safety.

The rule should regulate the chemicals that can be placed in the frac water in addition to requiring their disclosure.

The rule should require testing and disclosure of the flow back water and monitoring and reporting the volume that comes back up. Flow-back water may contain naturally occurring radioactive materials (NORMs) and increased levels of salt. But how much and of what characteristics? How can the agency protect the public without knowing?

The rule should regulate the disposal of the flow back. Fracturing jobs that require the injection of more than 5,000 barrels of fluid should be required to use a closed-loop system to capture the flow back and it should be transported to proper treatment facilities.

RESPONSE UUU:

This comment is beyond the scope of the proposed revisions.

COMMENT VVV:

East Resources stated that the requirements of sections 21.2.a., 21.2.c., and 21.6.a., are unnecessary as it relates to pits and impoundments with capacities greater than 5000 bbls.and less than those covered under W. Va. Code §22-14. The requirements are appropriate for impoundments covered under sections 21.4. and 21.5. The remaining elements (21.2.b. and 21.3.) could be utilized and coupled with regular inspections are more than adequate for proper construction due to the temporary nature of these structures.

RESPONSE VVV:

The structures addressed in section 21 are of such a size that, for the purposes of public safety and environmental protection, they warrant all the additional design and construction requirements outlined in that section.

COMMENT WWW:

EQT Production asked if the notice to the Office of Oil and Gas in section 21.1. is a notice in addition to the location of pits and impoundments currently required on plats and plans and also who should the notice be provided to.

RESPONSE WWW:

The notice requirement in section 21.1. is a separate notice regarding the actual construction activity and shall be provided to the Office of Oil and Gas.

COMMENT XXX:

EQT Production stated that under 21.2.b. due to site variances, plans can't be generic but will need to be specific to each site.

RESPONSE XXX:

The DEP agrees that site conditions may vary and that specific plans will have to be based on those conditions. However, basic criteria, such as those in section 21.b., shall apply in all cases.

COMMENT YYY:

EQT Production stated that under section 21.6.a., a receipt from the Chief stating that the engineer's certification had been received, would be useful.

RESPONSE YYY:

The operator may choose to receive confirmation of the Offices' receipt through certified mail or through personal service.

COMMENT ZZZ:

EQT Production stated that under section 21.6.a. plans may need to be modified during the building phase for site specific reasons and there needs to be protocols to prevent significant down time.

RESPONSE ZZZ:

The DEP understands the need for flexibility to avoid significant down time, and will work toward that goal, so long as the structure is built according to the engineer's original or modified plan.

COMMENT AAAA:

EQT Production stated that under section 21.6.b., because these structures require a registered professional engineer's design and certification, the three day inspection frequency may not be necessary.

RESPONSE AAAA:

The DEP agrees that the inspection frequency can be lengthened. The frequency will be changed from every three days to every two weeks and after significant (SHOULD THIS BE A PARTICULAR AMOUNT I.E. 2"/HOUR?) rain events.

COMMENT BBBB:

The West Virginia Oil and Natural Gas Association stated that it believes that pit and impoundment construction should not be in section 16.4. but rather that section 21 contain the construction requirements for pits and impoundments, regardless of size.

RESPONSE BBBB:

The proposed language was inserted in an effort to be consistent with the current rule. In addition to construction language for pits, the rule currently contains construction language for access roads and drilling sites in section 16. We believe that either option is acceptable and will leave the proposal as is.

COMMENT CCCC:

The West Virginia Oil and Natural Gas Association stated that different standards should apply to construction and reclamation of wastewater pits and fresh water impoundments. Wastewater pits are managed so that they present no danger from failure of the pit or release of pollutants. Fresh water impoundments, on the other hand, are regulated only to eliminate danger caused by failure of the containing dike or dam.

RESPONSE CCCC:

The DEP agrees that waste water pits and fresh water impoundments pose different risks. However, in both cases the need to protect against leaks and particularly failure is critical. Consequently, the general design criteria will be similar for the two structures.

COMMENT DDDD:

The West Virginia Oil and Natural Gas Association stated that two feet of freeboard under section 16.4.c., may be excessive in some cases, for instance when the pit is shallow or if the structure only contains fresh water. They also question when the operator is required to notify the inspector regarding the amount of freeboard.

RESPONSE DDDD:

The issue of freeboard is independent of the depth of the pit but rather is necessary to prevent overflow and that the overflow, even if it is just fresh water, may cause damage to the impoundment wall compromising its structural integrity. Regarding notification, the intent of the language is to require notification of the need for an overflow facility when the operator is unable to prevent overflow.

COMMENT EEEE:

The West Virginia Oil and Natural Gas Association stated that liners should only be required in impoundments to the extent that they are necessary from a structural standpoint.

RESPONSE EEEE:

The concern of a structural failure is precisely the reason the requirement exists for impoundments.

COMMENT FFFF:

The West Virginia Oil and Natural Gas Association stated they do not support the reference to impoundments in section 16.4.g. due to the fact that reclamation of impoundments will not cause a release of pollutants. They request clarification that reclamation of impoundments using standard storm water pollution prevention methods is what would be expected.

RESPONSE FFFF:

The DEP agrees that the release or overflow of fresh water from an impoundment would not constitute a problem on its own. However, an overflow that results in sediment runoff to the waters of the State is not acceptable. Consequently, the reference to impoundments should remain in this section and the operator should follow pollution prevention methods, such as those addressing stormwater, to protect against such an event.

COMMENT GGGG:

The West Virginia Oil and Natural Gas Association stated that they do not believe that reclamation of impoundments should be included in section 16.4.h. and required to be reclaimed within the six month period as they could be used for multiple wells and do not pose an environmental hazard.

RESPONSE GGGG:

The DEP agrees that these impoundments could be safely used for multiple wells. As it relates to disturbance on a particular permitted well site(s), the impoundment will

eventually need to be reclaimed. The last sentence of section 16.4.h. will be modified to read as follows: "The reclamation period for pits and impoundments permitted with multiple wells shall be calculated from the date the last well was drilled."

COMMENT HHHH:

The West Virginia Oil and Natural Gas Association stated that construction requirements should be in one location in the rule with the differentiation between small and large pits and impoundments.

RESPONSE HHHH:

See response BBBB.

COMMENT IIII:

The West Virginia Oil and Natural Gas Association stated that operators should be allowed to use standard designs that have been approved by a professional engineer as opposed to an individual plan for each pit or impoundment under section 21.

RESPONSE IIII:

The DEP recognizes that plans designed under section 21 may be similar when the site conditions allow. It will be the decision of the engineer as to how individualized a particular plan needs to be. Regardless, each structure under section 21 will need its own certified plan.

COMMENT JJJJ:

The West Virginia Oil and Natural Gas Association asked for clarity regarding section 21.4. and to allow the Dam Control and Safety Act (W. Va. Code 22-14) to govern large pits and impoundments without additional requirements in this rule.

RESPONSE JJJJ:

It is the intent of the DEP that sections 21.2., 21.3., and 21.6. not apply to pits and impoundments under the jurisdiction of W. Va. Code 22-14.

COMMENT KKKK:

The West Virginia Oil and Natural Gas Association stated that requiring inspection of pits and impoundments every three days is excessive.

RESPONSE KKKK:

See response AAAA.

COMMENT LLLL:

The Independent Oil and Gas Association of West Virginia, Inc. (IOGA) stated that it supports the technical revisions and the revision changing the permit fees to be consistent with the statute.

RESPONSE LLLL:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT MMMM:

IOGA stated that it is concerned about the rule-making process, in that the oil and gas industry is not represented on the Environmental Protection Advisory Council and consequently can be and was in this instance, not included in the initial steps of the process. IOGA encourages the DEP to involve IOGA and others in the regulated community in the formation and development of statutory and regulatory revisions.

RESPONSE MMMM:

This comment is beyond the scope of the proposed revisions.

COMMENT NNNN:

IOGA stated the rule should provide flexibility regarding the definition of freshwater impoundments and wastewater pits and asks for confirmation that the rule treats the two structures the same as it relates to design, construction, and maintenance. Further, IOGA stated that the definitions of pits and impoundments should be changed to be more consistent with the terms' usage otherwise and in particular to clarify whether a particular pit or impoundment is subject to the additional requirements of section 21.

RESPONSE NNNN:

The DEP confirms that there is no difference between pits and impoundments regarding design, construction, and maintenance. The distinction between the two structures is that all pits must be permitted through the Office of Oil and Gas and can't be left permanent pursuant to section 21.5. Impoundments may not necessarily be permitted through the Office of Oil and Gas and may be left permanent pursuant to section 21.5. The DEP believes that the proposed definitions appropriately reflect the particular structure being defined. The DEP agrees that clarification is needed to better identify whether a particular pit or impoundment is subject to the additional requirements of section 21 and will revise the language.

COMMENT OOOO:

IOGA stated that the revisions in section 9.2.i. regarding UTM coordinates should not be made mandatory at this time and that it is an unnecessary expense that will not result in additional meaningful information. IOGA further stated that it had consulted with surveyors that do not currently have the capacity to use this system.

RESPONSE OOOO:

The current requirements under section 9.2.i. are antiquated and need to be updated. The use of UTM coordinates is commonly used in many applications as a means to accurately establish locations. In fact, the Office of Oil and Gas currently receives plats that provide UTM coordinates in addition to the current requirements. Accurate well location information is extremely important. Being provided the UTM coordinate information will allow the surveyor to provide the data in a more accurate format and allow the DEP to more accurately process the information.

COMMENT PPPP:

IOGA stated that the new freeboard requirements in section 16.4.c. are overly restrictive and that the rule should include flexibility with regard to the exact amount of freeboard. IOGA states that the freeboard requirement should be one foot with the possibility of two feet, upon determination by the chief that the additional amount is warranted at a particular site and that the amount should be an approximation.

RESPONSE PPPP:

Freeboard is an important component in ensuring the integrity of a structure and two feet is not excessive.

COMMENT QQQQ:

IOGA stated that the use of pit liners in all circumstances is not appropriate and that under certain circumstances the more conservative and environmentally protective approach would be to avoid the use of a pit liner. IOGA urged the DEP to retain the existing requirements giving operators the flexibility to determine the use of a liner on a case-by-case basis.

RESPONSE QQQQ:

The DEP believes that a synthetic liner is necessary to provide additional assurance that pits and impoundments don't leak and hence don't create a potential environmental or safety problem. Liners have been commonly used in the oil and gas industry for years. Even under the existing requirements, it is rare that a liner is not use.

COMMENT RRRR:

IOGA stated that the rule under section 21, should provide more flexibility regarding design and maintenance of pits and impoundments. Further IOGA stated that the subsections in section 21 should be made clear as to what pits and impoundments are included in this section. IOGA stated that depending on the construction plans for a pit or impoundment, it may not be necessary that the plan be certified by a professional engineer. IOGA suggested that the Office of Oil and Gas review plans submitted by the operator to determine if an engineer's certification is needed. IOGA also stated that it believed that the inspection frequency of three days is excessive and that inspection of structures covered under the Dam Safety and Control Act should be governed by that statute. Inspection frequency of structures not covered under the Dam Safety and Control Act should be determined by the activities at the site. IOGA recommended that the requirement for monthly inspection certification be deleted because it is unnecessary.

RESPONSE RRRR:

As stated in part of response NNNN, the DEP agrees that some clarification is needed regarding what pits and impoundments are being addressed in section 21 and will revise the language to provide clarification. The DEP believes that each structure subject to the requirements in section 21, should be designed and certified by a registered professional engineer. In many cases those designs may be standard, but it will remain up to the engineer to determine if additional individualized planning is necessary. It was the intent of the DEP to provide for flexibility in the design by not outlining an exhaustive list of requirements but to rather allow a registered profession engineer to provide the appropriate design. As stated in response AAAA, the DEP agrees that the inspection frequency can be changed and as stated in response JJJJ, these inspections will not apply to structures under the Dam Safety and Control Act. Regarding IOGA's last point above, the DEP believes that the inspection certification is important as it provides accountability for the process.

Comments Provided During the Public Hearing on Proposed Changes to Legislative Rule, Title 35, Series 4 Held on July 14, 2009 With Corresponding Responses

COMMENT SSSS:

Don Garvin stated support for all the proposed changes.

RESPONSE SSSS:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT TTTT:

Don Garvin stated that the pit contents including liners should be removed and taken to an authorized off-site disposal facility.

RESPONSE TTTT:

See response B.

COMMENT UUUU:

Don Garvin stated that drillers should have an emergency plan for notification of surface owners and down gradient landowners in the event of pit break regarding the larger structures.

RESPONSE UUUU:

See response H.

COMMENT VVVV:

Don Garvin stated a concern regarding the volume of water withdrawn as part of the fracturing process. He stated a concern for the possibility of dewatering of freshwater resources.

RESPONSE VVVV:

This comment is beyond the scope of the proposed revisions.

COMMENT WWWW:

Don Garvin stated that a new process is needed regarding frac flow-back and disposal. Mr. Garvin recommended a "closed loop" system in which all frac water is brought in in trucks and taken out in trucks and never placed in a pit or is placed in the pit only temporarily. Mr. Garvin stated that the frac water volume is too large to land apply and the agency should look further at that.

RESPONSE WWWW:

This comment is beyond the scope of the proposed revisions.

COMMENT XXXX:

Beth Little stated that she is aware that the DEP is short on the resources necessary to deal with what needs to be taken care of. She suggested that the number of active permits be limited to a reasonable number that one inspector could manage, times the number of inspectors currently working for the DEP.

RESPONSE XXXX:

This comment is beyond the scope of the proposed revisions.

COMMENT YYYY:

Beth Little stated that energy is important and the demand will increase but that water is vital and there is no alternative.

RESPONSE YYYY:

This comment is beyond the scope of the proposed revisions.

COMMENT ZZZZ:

Matt Norpell stated that there needs to be transparency of chemicals used in drilling. The community has a right to know everything that's going into the ground and everything that is coming back out of the ground and potentially getting with the groundwater and not coming with the groundwater.

RESPONSE ZZZZ:

This comment is beyond the scope of the proposed revisions.

COMMENT AAAAA:

Matt Norpell stated that enforcement is absolutely necessary and that the DEP needs to beef up its inspection team and not permit more than it has the capacity to permit.

RESPONSE AAAAA:

This comment is beyond the scope of the proposed revisions.

Written Comments Filed by George Monk and Molly Schaffnit on Proposed Changes to Legislative Rule, Title 35, Series 4 With Corresponding Responses

Comment BBBBB through comment UUUUU were filed in written format by George and Molly Schaffnit.

COMMENT BBBBB:

George Monk and Molly Schaffnit stated that broadly, they don't believe the revised regulation as it appears in 35CSR4.16.4 and 35CSR4.21 is protective enough of the environment and health and safety of persons.

RESPONSE BBBBB:

The DEP believes that as it relates to the particular issue being addressed, and with some exceptions as identified in other comments and responses, the proposed revisions are appropriate.

COMMENT CCCCC:

George Monk and Molly Schaffnit stated that they believe all pits should require individual permits, that all should be certified by a Professional Engineer, and all should have specific closure requirements, including permanent marker and deed notice.

RESPONSE CCCCC:

The comment is generally beyond the scope of the proposed revisions. However, in regard to the certification by a professional engineer, the smaller pits (those not covered under section 21) are much more easily constructed in a sound manner without the need for certification by a professional engineer.

COMMENT DDDDD:

George Monk and Molly Schaffnit stated that the General Permit and the Field Manual are woefully out of date and don't come close to meeting current needs, much less the more stringent requirements we believe are necessary.

RESPONSE DDDDD:

This comment is beyond the scope of the proposed revisions.

COMMENT EEEEE:

George Monk and Molly Schaffnit stated that they believe, as we'll state again below, that all pit regulations should appear in a single section of the Code.

RESPONSE EEEEE:

See response BBBB.

COMMENT FFFFF:

George Monk and Molly Schaffnit stated that under 16.4.a., additional wording such as "in order to protect the waters of the state" after "integrity" is needed.

RESPONSE FFFFF:

The purpose of the rule language is broader that the commenter's suggestion.

COMMENT GGGGG:

George Monk and Molly Schaffnit stated that we wholeheartedly agree with the change made in section 16.4.c.

RESPONSE GGGGG:

The Office of Oil and Gas acknowledges and appreciates the comment. No response necessary.

COMMENT HHHHH:

George Monk and Molly Schaffnit stated that under section 16.4.d. they believe that a specific type and thickness of liner should be given as a minimum requirement for temporary pits (such as 20 mil LLDPE) and for permanent pits (60 mil HDPE, dual lined with leak detection). We also believe that specific requirements for the installation of liners, including anchor trench description and width of levee wall, are necessary.

RESPONSE IIIII:

Additional requirements for liner installation are unnecessary. See response XX.

COMMENT JJJJJ:

George Monk and Molly Schaffnit stated under section 16.4.e. that the subsection needs to be more detailed. The intent is vague.

RESPONSE JJJJJ:

The last portion of this section addresses the intent—preservation of the structural integrity.

COMMENT KKKKK:

George Monk and Molly Schaffnit stated under section 16.4.g. that closure should require either encapsulation or removal of pit contents. Cover should be 3 feet minimum over encapsulated cell. Soil should be contoured to prevent ponding before seeding.

RESPONSE KKKKK:

This comment is beyond the scope of the proposed revisions.

COMMENT LLLLL:

George Monk and Molly Schaffnit stated that under section 16.4.h. the "agricultural purposes" in this subsection is inappropriate or should have its own subsection. Pits

should be constructed, operated and maintained, and closed and reclaimed so as to protect the state's environment and residents' safety and health.

RESPONSE LLLLL:

See response LLL.

COMMENT MMMMM:

George Monk and Molly Schaffnit stated under section 21.1. that a separate permit for each pit would satisfy many of the requirements of this subsection and would have stronger effect instead of notice of construction etc. Ideally, pits under 5,000 barrels could use a general permit; larger pits would require a special permit based on the general permit. Again, we don't understand why the requirements in Section 21 shouldn't appear in 16.4 (or vice versa). The 5,000-barrel cutoff point is artificial and arbitrary. Large volume pits do require care in siting and construction, but so do smaller volume pits. We believe the Department should move the requirements in section 16.4 to section 21, making section 21 the state's pit rule, whole and coherent.

RESPONSE MMMMM:

The larger pits and impoundments are new to the industry and create greater challenges for the purposes of protection of the environment and health and safety of the public. The standard pits, which are less than 5000 bbls., that have been built for years in the industry do not need these additional design and construction regulations.

COMMENT NNNNN:

George Monk and Molly Schaffnit stated under section 21.2.a. that we agree that a professional engineer should be required to certify all pit design and construction. We believe this is true for all pits, regardless of size (see our Draft Recommendations, section 1.002, page 27 in Appendix 3). As worded the subsection could mean that a possibly inappropriate "one size fits all" pit plan could be used. We believe that a West Virginia registered Professional Engineer's making a site-specific plan for each pit constructed would best ensure public safety.

RESPONSE NNNNN:

See response IIII and response MMMMM.

COMMENT OOOOO:

George Monk and Molly Schaffnit stated under section 21.2.b. that the freeboard requirement as worded is a design requirement. If the pit develops a breach or there's a break in the liner, the freeboard must be maintained so the level of the pit is 2 feet below the breach or break.

RESPONSE OOOOO:

A pit overflow, which could be in connection with a "breach", is a different issue than a pit leak (liner break). The second case would be a violation of section 16.4.d. of the rule.

COMMENT PPPPP:

George Monk and Molly Schaffnit stated under section 21.3. that they believe 70% cover should be attained before the pit is considered operational. As written this subsection's intent isn't clear. Is seeding all that is required? During reclamation only?

RESPONSE PPPPP:

The purpose of section 21.3. is to maintain the integrity of the structure during the operation.

COMMENT QQQQQ:

George Monk and Molly Schaffnit stated under section 21.4, that this requirement, and the one in 21.5, doesn't make sense unless it is permitting the use of existing streams or ponds as pits. That practice should be utterly disallowed. If the structures are temporary and for dewatering, that should be stated explicitly. We believe that dewatering from a stream, river, pond or lake should require a separate permit. A dewatering permit would allow the state to have better control and have knowledge of industry's use of the waters of the state.

RESPONSE QQQQQ:

Section 21.4. identifies the pits and impoundments that fall under the Dam Safety and Control Act because of their size. The design and construction requirements under section 21 will not apply to these structures. Section 21.5. identifies additional requirements for impoundments that don't fall under the Dam Safety and Control Act and that the operator wishes to make permanent.

COMMENT RRRRR:

George Monk and Molly Schaffnit stated under section 21.6.b. that the inspection requirement that appears in this subsection is sensible and should be required for all pits. We would add a requirement for special inspections after significant rainfall events (e.g., 1 inch or more rainfall in 24-hour period).

RESPONSE RRRRR:

See response F.

COMMENT SSSSS:

George Monk and Molly Schaffnit stated that pits near a body of water should be regulated. There needs to be a stated distance between the bottom of the pit and the seasonally high ground water and from water supplies. There should be a minimum distance of pits from buildings.

RESPONSE SSSSS:

See response C.

COMMENT TTTTT:

George Monk and Molly Schaffnit stated they believe the pit should have a permanent marker and deed notice after reclamation.

RESPONSE TTTTT:

This comment is beyond the scope of the proposed revisions.

COMMENT UUUUU:

George Monk and Molly Schaffnit stated that stormwater requirements should be well stated.

RESPONSE UUUUU:

This comment is beyond the scope of the proposed revisions.

Numerous additional written comments were filed that were pointed out by Mr. Monk and Ms. Schaffnit as being in other sections that have not been changed in the current proposed revisions. Consequently responses to these comments have not been prepared.

Comments and Questions Provided by George Monk During the Public Hearing on Proposed Changes to Legislative Rule, Title 35, Series 4 Held on July 14, 2009 With Corresponding Responses

COMMENT VVVVV:

Why does the state not require a permit for each pit?
Why does the state not require a permit for each impoundment?
Is the state working on a revision of the General Water Pollution Control Permit?
Why does a 5000 bbl. pit require a professional engineer's certification and a 4980 bbl. does not?
There should be additional reclamation requirements for pits.

"Waters of the state" should be defined.
Well records submitted to the state should include material data safety sheets for all chemicals used at the well.
The state should require operators furnish sampling results before a well is drilled and after, along with a publically available database.
Pit location after reclamation should be marked and noticed in the deed.

RESPONSE VVVVV:

These comments and questions are beyond the scope of the proposed revisions.

COMMENT WWWWW:

How is the size of the pit determined?
Does the 5000 bbl. pit capacity include freeboard?

RESPONSE WWWWW:

The capacity is determined through a volumetric calculation of the length, width, and depth of the pit and would include freeboard.

COMMENT XXXXX:

There needs to be a distance between the bottom of the pit and ground water.
There needs to be a distance between a pit and a water supply.
There needs to be a distance between a pit and surface water bodies.
All pits should have a professional engineer's certification.
Liner type and thickness should be specified and there should be liner installation requirements.
There should be a regular inspection of all pits regardless of size.
There should be separate permits for each pit and for dewatering.

RESPONSE XXXXX:

See response C.
See response C.
See response C.
See response IIII and response MMMMM.
See response IIIII.
See response F.
See response MMMMM.