

# PITS AND IMPOUNDMENTS

## Natural Gas Horizontal Well Control Act

West Virginia Department of Environmental Protection

Office of Oil and Gas

W.Va. Code §22-6A

- Scope of Legislation
- Applicability to Impoundments
- Policies
- Procedures
- Implementation
- Presented by John Kearney,  
AMENDED – September 26, 2013

# Scope of Legislation

as it relates to Impoundments and Pits



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## Three Sections:

### **§22-6A-9. Certificate of Approval**

- Establishes rules for Pits and Impoundments not associated with a specific well work permit (Centralized).
- Mandates Centralized Pits and Impoundments receive **Certificate of Approval**.
- Similar to Dam Safety Rules.
- (h) Each certificate of approval issued by the secretary pursuant to the provisions of this article may contain other terms and conditions the secretary prescribes.

# Scope of Legislation

as it relates to Impoundments and Pits, continued.



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## **§22-6A-10. Notice to property owners.**

- Requires notification of centralized impoundment to owners of the surface tract prior to installation of impoundment. Also, because this activity is not associated with the permitted well work, a surface use agreement will be required for the placement of impoundments or pits

## **§22-6A-23. Impoundment and pit safety study; rulemaking.**

- Mandates that by January 1, 2013, DEP reports to the Legislature on the safety of pits and impoundments utilized pursuant to section nine of this section.
- Upon a finding that greater monitoring, safety and design requirements or other specialized permit conditions are necessary, the secretary shall propose for promulgation legislative rules establishing these new requirements.

# Definitions



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The following definitions are to be used:

**Impoundment** – “A man-made excavation or diked area for the retention of fluid.”  
By convention - containing freshwater only.

**Pit** – “a man-made excavation or diked area that contains or is intended to contain an accumulation of process waste fluids, drill cuttings or any other liquid substance generated in the development of a horizontal well and which could impact surface or groundwater.” Any mixture of waste will classified as a pit.

**Centralized** – an impoundment or pit that is **NOT** on a permitted drilling location.

**Associated** – an impoundment of pit that **IS** on a permitted drilling location.

**Certificate of Approval** – a formal approval for centralized impoundments or pits.

# Applicability of §22-6A-9

- Impoundments greater than 210,000 gallons (5,000 bbls).
- Above ground diked impoundments greater than 210,000 gallons.  
(Portable temporary structure, not tanks)
- Impoundments not associated with a specific well work permit.
- Establishes rules and procedures to issue **Certificate of Approval** for impoundment and pits NOT associated with well permits.

## Exceptions:

- Impoundments associated with well work permit.
- Farm Ponds.

# Exceptions to §22-6A-9

## Let's get the exceptions out of the way.

- Associated Impoundments:
  - Nothing has change by this legislation.
  - Regulated by W. Va. Rule § 35-4-21
  - Reclamation time frames same as well pad.
  - We will standardize communication process, forms, submittals.
  - We will also begin assigning numbers to all impoundments and enter in our ERIS data base.
  - You will submit these on paper and via Email.
  - New Email: [depimpoundments@wv.gov](mailto:depimpoundments@wv.gov)

# Exceptions to §22-6A-9, cont.

- Farm Ponds
  - Farms Pond are exempt from Certificate of Approval rule.
  - They are not exempt from US Army Corps of Engineer or USEPA.
  - United States Department of Agriculture's Natural Resources Conservation Service "Conservation Practice Standard - Ponds" (Code 378)
  - There are standards for placement in low hazard area, and design standards for spillway, drainage area, size and use.
  - Farm Pond Fact Sheet – Farm Pond Standard – See Appendix
  - Pay attention to US Army Corps of Engineer and EPA Clean Water Act regulations.

# Centralized Impoundments



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## §22-6A-9

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### Scope of Legislation:

- Centralized pits (not on a well permit) will require a Certificate of Approval.
- This is very similar to a Dam Safety Certificate of Approval.
- Good for one year, renew annually, application fee \$300, annual \$100.
- To enlarge, alter, repair, remove or abandon an impoundment will require a modification to the Certificate of Approval, \$300 Fee.
- Designs and plans will be charge of Professional Engineer, registered in WV.
- You have the right to appeal.
- You have six months to reclaim impoundment after expiration of approval.
- New forms
- Waste pits have more stringent design standards.



# Application Process

## Submit Application and Plans

- Application – basic information

## With an Impoundment Certificate of Approval application, you will include:

- Engineered Construction Plans , WV P.E. Certified
- Erosion and Sediment Control Plan, WV P.E. Certified
- A Reclamation Plan – Post-Construction and Post-Use, WV P.E. Certified .
- Impoundment Monitoring Plan, WV P.E. Certified
- Impoundment Maintenance and Emergency Plan, WV P.E. Certified
- Water Management Plan. How will you fill it? You will reference this water management plan once water begins moving to satellite well pads.

## Notifications: - See §22-6A-10

- To surface owner. Copies of proof of delivery will be included with application.
- Also notice the above people within 7 days, but not less than 2 days, of the start of construction.

# Elements of Plans

## **Engineered Plans.**

- Waste Pits have more safe guards; duel liners, leak detection, groundwater monitoring.

## **Reclamation Plans.**

- Post-construction reclamation plan – after you’ve built it.
- Post-closure reclamation plan - after you’ve closed it.

## **Maintenance Plan.**

- Scheduled maintenance, routine repairs.

## **Monitoring and Emergency Plan.**

- Inspections, emergency planning, and response. You will evaluate the location of impoundments and classify using dam safety Hazard Classification criteria.

# Elements of Plans

## **Monitoring and Emergency Action Plan**

### Hazard Classes

- ~~Class 1 (High Hazard)~~
- ~~Class 2 (Significant Hazard)~~
- ~~Class 3 (Low Hazard)~~
- ~~Class 4 (Negligible Hazard)~~
- **Hazard Evaluation** – The applicant will survey surrounding area for potential hazards should pit or impoundment fail, paying attention to homes, structures, roads, etc.
- Example plans are coming. Modeled on Dam Safety regulations.
- Location and classification of new centralized impoundments will impact your emergency plan and how you prepare for an emergency.
- Monitoring and Emergency Action Plans will detail monitoring and emergency notification and procedures, and assess risk.

## **Surface Owner Agreements**

- Centralized impoundments and pits will be constructed on landowners who enter into surface use agreements with you.

# Water Management Plans

## **Water Management Plans (WMP)**

- A WMP will be needed to fill your impoundment. Will also be needed if you will plan on diluting a waste pit with freshwater from a stream source (greater than 5,000 bbl. / month).
- Apply for WMP concurrently with Impoundment application or prior.
- A centralized impoundment WMP can be referenced for well pads.
- Will integrate with other WMP plans. Waste pits will be referenced in other WMP disposal. Waste pits may also be sources of other WMP.
- Waste Pits may need WMP if receiving water from stream or water utility.

# A Word About Dams

## **Do not build a dam unless you intend to build a dam.**

- Definition: - (See Impoundment Page Dam Definition)
  - This is an option if you are willing to design and build to dam specifications.
  - Height and volume driven.
    - 25' tall embankment **and** 15 acre feet of water (116,375 bbls, 4.8 million gal)
- OR
- 6' tall embankment **and** 50 acre feet of water (387,917 bbls, 16.2 million gal)
  - Impoundments often exceed the volume limit, but not the height limit.
  - Incised volume does not count to total volume.
  - **Embankment height** is key to definition of a dam. How to measure ? **Where to measure from ?** Generally, the base of any earth disturbance on the embankment.

# Appropriate Location – Due Diligence



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- Per 35-4-21.1 “All pits and impoundments with capacity of greater than five thousand (5,000) barrels used in association with an oil and gas operation, 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 effects and to assure safety to the public.**”
- Responsibility of operator to consider history of location. Some historical mining locations may present water quality problems. Former industrial location could also present problems.
- Assure safety to surrounding communities, people, and environment.

# Application Forms

To standardize how we communicate about impoundments, **New** impoundments and pits forms have been created:

“Permit Associated Impoundment / Pit Registration”

“Centralized Impoundment / Pit Application”

- Basic information will be captured.
- It will have checklists for required information and additional plans.
- All impoundments will get a number. We need to standardize names for tracking purposes.
- Remember standard nomenclature:

Impoundment = Freshwater

Pit = Waste

All forms available at [www.dep.wv.gov/oil-and-gas/impoundments](http://www.dep.wv.gov/oil-and-gas/impoundments)

# Application / Approval Process

## Centralized Impoundments and Pits – “How-To”

1. Complete and submit “Centralized Impoundment / Pit Application”.
2. Show proof of surface owner notification requirement.
3. Include all required plans, including Water Manage Plan.
4. Water Management Plan will be forwarded by OOG to Water Use section for review and approval.
5. Office of Oil and Gas will review application and plans.
6. Oil and Gas Inspector will visit to review Erosion & Sediment Control Plan.
7. WMP gets approved.
8. Application is approved then given “Certificate of Approval”.
9. You will receive “Certificate of Approval” and impoundment number.
10. At least 7 days prior to construction commencement, complete “Notification of Impoundment / Pit Construction”. Submit a copy of this form to Office of Oil and Gas, local Oil and Gas Inspector, and those requiring notification.
11. Build impoundment or pit.
12. Remember the WMP notification requirement prior to filling.
13. Submit As-built P.E. Certification (and other Waste Pit certified plans, **required before filling**).
14. You may now fill the impoundment or pit.



# Application / Approval Process

## Associated Impoundments and Pits – “How To”.

1. Apply for well work permit as usual with impoundments included in your construction drawings, E&S Plans, etc.
2. Complete and submit “Permit Associated Impoundment / Pit Registration” with the application.
3. An impoundment number will be assigned and sent to you.
4. At least 7 days prior to construction commencement, complete “Notification of Impoundment / Pit Construction”. Submit a copy of this form to Office of Oil and Gas and to local Oil and Gas Inspector.
5. Build it.
6. Submit P.E. Certified As-Built Certification.
7. Fill the impoundment or pit.

## Notes on Water Management Plans.

Since associated impoundments will be associated with a drilling permit, you will have already applied for a water management plan, or have done so concurrently. If you have an approved WMP, provide this number on application. If not, notify as “pending”. In no case will you pump large volumes of water without an approved WMP.

# Impoundment Numbers

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## Examples of Types

000-FWC-0001	000-WPC-0001
000-FWA-0001	000-WPA-0001

## Explanation of Number and Types

000 = County Code

FWC = Fresh Water – **Centralized** – Impoundment –not associated with API permit

FWA = Fresh Water – **Associated** – Impoundment –associated with API permit

WPC = Waste Pit – **Centralized** – Pit not associated with API permit

WPA = Waste Pit – **Associated** – Pit associated with API permit

0001 = Sequentially numbered by county

# Centralized Pits - Key Elements



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- Centralized Pits will require geotechnical and groundwater investigation.
- More upfront planning and design.
- Groundwater wells, groundwater monitoring.
- Dual 60 mil liners, leak detection zone.
- Details available in “Design and Construction Standards for Centralized Pits”.
- These requirements are in the process of being codified.

# All information available on internet:

<http://www.dep.wv.gov/oil-and-gas/Impoundments>



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The screenshot shows the website for the West Virginia Department of Environmental Protection (dep). The header includes the 'west virginia' logo, 'State Agency Directory | Online Services', and a search bar labeled 'Search WV DEP'. The main header features the 'dep' logo, 'west virginia department of environmental protection', and the tagline '- Promoting a Healthy Environment'. A navigation bar contains links for 'DEP Offices | News | Outlook Web Access | Text size A A A'. The page title is 'Home > Office of Oil and Gas > Impoundments and Pits'. The main content area is titled 'Impoundment and Pit Homepage' and contains two paragraphs of text. The first paragraph discusses the Natural Gas Horizontal Well Control Act and the registration process. The second paragraph refers to a PowerPoint presentation for review. A note at the bottom of the text area states that forms have been updated and provides a link to a PowerPoint PDF. On the left side, there is a vertical menu with links to 'General Information', 'Resources', 'Annual Reporting Requirements', 'Database Information', 'Horizontal Drilling Permits', 'Impoundments and Pits', and 'Water Management Plans'. At the bottom, there is a table with two columns: 'Form #' and 'Form Description'.

Form #	Form Description
IMP-1A	Permit Associated Impoundment/Pit Registration
IMP-1B	Centralized Impoundment / Pit Application
IMP-2	Notification of Impoundment Construction
IMP-3	Impoundment As-Built Form
IMP-4	Impoundment Annual Certification Form
IMP-5	Impoundment Modification / Closure Form
WW-6A	Notice of Application

# Plan Submittal

Submit original paper copy of application to:

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Impoundment Registration  
601 57<sup>th</sup> Street, SE  
Charleston WV 25304

Any questions can be forwarded to:

Chad Carmichael

WV DEP Office of Oil and Gas

[Char.R.Charmichael@wv.gov](mailto:Char.R.Charmichael@wv.gov)

# List of Forms and References



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All Forms and References will available on Office of Oil and Gas Web Page

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Forms	References
Permit Associated Impoundment / Pit Registration - Form IMP-1A - <a href="#">Link</a>	Natural Gas Horizontal Well Control Act; W.Va. Code §22-6A
Centralized Impoundment / Pit Application - Form IMP-1B - <a href="#">Link</a>	W.Va. Code §35-4-21 Construction of Pits and Impoundments with Capacity of Greater Than 5,000 bbl
Notification of Impoundment / Pit Construction - Form IMP-2 - <a href="#">Link</a>	W.Va. Code §47-34 Dam Safety Rule
Impoundment As-Built Certification - Form IMP-3 – <a href="#">Link</a>	United States Department of Agriculture’s Natural Resources Conservation Service “Conservation Practice Standard - Ponds” (Code 378)
Centralized Impoundment / Pit Annual Recertification - Form - <a href="#">Link</a>	Farm Pond Fact Sheet
Centralized Impoundment / Pit Modification and Closure Form – <a href="#">Link</a>	Design and Construction Standards for Centralized Pits
Notice of Application– Form WW-6A <a href="#">Link</a>	Example Monitoring and Emergency Plan
W.Va. Code §35-08 Rules Governing Horizontal Well Devel.	Example Maintenance Plan

Q. Can we build an impoundment next to a permitted location, call it “centralized” and get a certificate of approval for it?

A. Yes, if you have a surface use agreement with the surface owner. These impoundments are not on the permitted location. Also, they should be designed to maintain some degree of separation from permitted pad LOD. The two activities can not interfere with reclamation of the other. They will also require their own plans.

Q. What about next to an existing, permit released pad?

A. Yes, if you don’t disturb the well pad.

Q. If WV DEP give us a certificate of approval, are we exempt form US Army Corps of Engineer issues?

A. No. The Corp of Engineers is diligent in their role of enforcing permitting requirements for work in the waters of the United States of America. You should consult with them before doing stream work.

# Good Ideas



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## Water Level Markings



**Water Level in feet.  
Better monitoring,  
detect leaks**



# Good Ideas



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## Water Level Markings

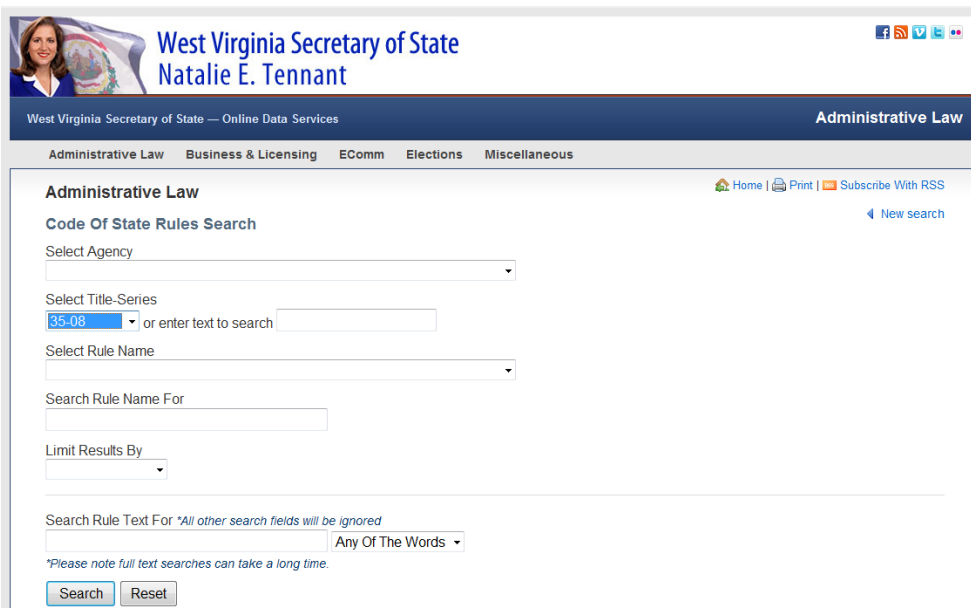


**Water Level in feet.  
Better monitoring,  
detect leaks**

# Update

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- The West Virginia Legislature has codified this law in W. Va. Code of Legislative Rules, §35-08
- This rule can be downloaded in its entirety from the WV Secretary of States Office:
- <http://apps.sos.wv.gov/adlaw/csr/index.aspx>
- Scroll to “35-08” on the search screen as shown below:



The screenshot shows the 'Administrative Law' search page of the West Virginia Secretary of State's website. The page header includes the name 'Natalie E. Tennant' and social media icons. The main navigation bar lists 'Administrative Law', 'Business & Licensing', 'EComm', 'Elections', and 'Miscellaneous'. The search interface is titled 'Code Of State Rules Search' and features several input fields: 'Select Agency' (a dropdown menu), 'Select Title-Series' (a dropdown menu with '35-08' selected and a text input field for additional search terms), 'Select Rule Name' (a dropdown menu), 'Search Rule Name For' (a text input field), 'Limit Results By' (a dropdown menu), and 'Search Rule Text For' (a text input field with a note: '\*All other search fields will be ignored'). A 'Search' button and a 'Reset' button are located at the bottom of the form. A note at the bottom states: '\*Please note full text searches can take a long time.'

# Questions



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