



**The Office of Oil and Gas; Oil and Gas Wells
West Virginia Department of Environmental Protection**

**Natural Gas Horizontal Well Control Act
Chapter 22 Article 6A of the West Virginia Code
Title §35 Series 8 of the Legislative Rule**

**WELL SITE SAFETY PLANS
and STANDARDS**

**West Virginia
February 1st, 2012**

Part 1

Office of Oil and Gas
and
Oil and Gas Conservation Commission

March 22nd, 2001

Policy Statement

**DEEP WELL DRILLING PROCEDURES
and SITE SAFETY PLAN REQUIREMENTS**

**Site Safety Plans Required -
ALL - DEEP PERMITTED WELLS**

§35-8 Rules Governing Horizontal Well Development . . .

. . . 8-3.4 Well Site Safety Plans

3.4.a. The well site safety plan shall be drafted in accordance with standards developed by the Office of Oil and Gas

August 25th, 2011

Well Site Safety Plan Standards

Chief, Office of Oil and Gas

§35-8-3.4 Well Site Safety Plan

All applications for well work permits involving well sites that will disturb three acres or more of surface, excluding pipelines, gathering lines, and roads, shall be accompanied by a well site safety plan to address measures to be employed by the operator for the protection of persons on the site, as well as the general public and the environment.

Well Site Safety Plan Standards

Summary

- Siting: site descriptions, topographic view
- Safety meetings, contacts, evacuations
- MSDS availability and where
- Well bore program, casing/cementing
- Strata incl. abnormal expectations
- Well control & BOP equipment
- Testing measures and schedules, training
- Well flaring operations & kill procedures
- H2S operations and handling
- Notification method and protection zones

§22-6A-7 Horizontal well permit required; well site safety plan

**. . . 7(b) Every permit application
filed shall contain . . .**

**. . . (13) A well site safety plan to address
proper safety measures to be
employed for the protection of
persons on the site as well as the
general public**

§22-6A-7 Horizontal well permit required; well site safety plan

- Encompass all aspects of the operation including actual well work, completion activities, and production activities
- Provide emergency point of contact
- Provide copy to the *LEPC at least 7 days prior to well work or site construction

**WV HSEM information – booklets
1(304)558-5380*

Incidentally -

Extended durations of Flaring operations

Please contact the
Division of Air Quality* WVDAQ
WVDEP

***New Source Review Permitting**
Phone: 304 926 0475 · Fax: 304 926 0479



§35-8-3.4 Well Site Safety Plan

and

**§22-6A-7 Horizontal well permit
required; well site safety plan**

CHECKLIST

By OOG Personnel in reviews

Available in application forms

Site Safety Plan

*Submit as a complete packet
in the permit application*



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CASING and CEMENTING STANDARDS

**West Virginia
February 1st, 2012**

Part 2

§35-8 Rules Governing Horizontal Well Development . . .

. . . 8-4.4 Casing and Cementing Standards . . .

The operator shall construct the well and conduct casing and cementing activities of all horizontal wells in accordance with standards developed by the Office of Oil and Gas

August 25th, 2011

Casing and Cementing Standards

Chief, Office of Oil and Gas

§35-8 Rules governing horizontal well development

Casing and Cementing Standards . . .

- Casing
- Cementing
- Conductor casing
- Surface casing
- Coal protection casing
- Intermediate casing
- Production casing

Highpoints of the rule within §22-6A-24

§22-6A-24 Casing and Cement Standards sub sections a) through h)

In summary Section 24 -

- Establishes authority
- Rules forthcoming (§35-8 Standards)
- Protection fresh water and coal zones
- Measures for application process
- Recognizes procedures in operations
- Establishes minimum standards

§22-6A-24 Casing and Cement Standards

a) Operators may drill through fresh groundwater zones in a manner that will minimize any disturbance of the zones . . .

Casing and cementing activities
will:

1. Provide control of the well at all times
2. Prevent gas/ other fluid migrations to FW & Coal seams
3. Prevent pollution of or volume reductions of FW zones

§22-6A-24 Casing and Cement Standards

b) Secretary shall propose legislative and emergency rules to carry out the purpose of this section 24.

§22-6A-24 Casing and Cement Standards

c) Rules promulgated shall include:

1. Effective control of the horizontal well
2. Prevention of gas / other fluid migrations into FW & Coal seams
3. Prevent pollution of or volume reduction of FW zones
4. Prevention of blowouts, explosions, and /or fires
5. Appropriate management of brines and discharges

§22-6A-24 Casing and Cement Standards

d) Procedures filing, approval, and revision of a casing program:

1. How the well is drilled, cased, and cemented; program in compliance with rules established
2. Rules regarding the casing program require:
 - A) Depth, thickness producing formation, expected pressure, FW zones, and deepest FW zones determined
 - B) Diameter of the borehole
 - C) Casing type, new/used, depth, diameter, wall thickness, and burst pressure rating
 - D) Cement type, yield, additives, est. amount of cement used
 - E) Estimated location of centralizers
 - F) Proposed borehole conditioning procedures
 - G) Alternate methods / materials required as a condition of the well work permit

§22-6A-24 Casing and Cement Standards

d) Procedures filing, approval, and revision of a casing program:

3) Copy casing program kept at well site

4) Oil and Gas Inspectors and Supervisory Inspectors may approve revisions provided

- revision meets standards by this section
- modifications are documented
- the revisions are initialed and dated
- revised programs available by department

§22-6A-24 Casing and Cement Standards

e) Rules promulgated shall provide procedures:

- 1) Appropriate conductor pipe setting
- 2) Installation of FW and Coal protection casing including remedial procedures by lost circulation
- 3) Installation of intermediate & production casing
- 4) Correction of defective casing and cementing
 - must report defects within 24 hours
- 5) Investigate natural gas migration - report promptly and conduct investigation of incident
- 6) Others considered necessary

§22-6A-24 Casing and Cement Standards

f) Minimum casing standards:

- 1) Shall have pressure rating that exceeds anticipated maximum pressure exposed and rating meets appropriate nationally recognized standards
- 2) Sufficient quality and condition meeting effects in tension during installation, cementing and subsequent drilling and production operations.
- 3) Centralizers used with proper spacing
- 4) Casing not disturbed for eight hours after cementing operations
- 5) No gas or oil production or pressure may exist on the surface casing or the annulus or the coal protection casing annulus

§22-6A-24 Casing and Cement Standards

g) Minimum cement standards:

1) Must meet

- appropriate national standards
- secure cement to the casing (bonding)
- isolate wellbore of all fluids (no migration)
- contain all pressure during all phases of drilling and operations of the well
- protect casing from corrosion and degradation

2) Must provide zonal isolation in FW and Coal protection casing annulus

§22-6A-24 Casing and Cement Standards

h) Notwithstanding (f) and (g) of this section the following may apply:

- 1) Revise the casing and cementing standards applicable from time to time through legislative rulemaking process for at least as protective of the environment
- 2) Approve alternative casing programs submitted with applications if secretary determines the alternative is at least as protective of the environment

**All plans, programs, procedures,
and standards which are
approved in the well permit are . . .**

“expectations in operations”

OOG Inspection and Enforcement

Requirements and Quality Assurances

Closing statement

Standards

**Site Safety Plans
and**

Cementing and Casing Programs

Objectives

Integrity - Safety

Environmental Protection

“wellbore and surface”

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