Draft Horizontal Well Rule Revisions

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Office of Oil and Gas

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Draft changes overview

- Changes required by statute
- Changes to permitting requirements
- Changes to operational requirements
- Changes to reporting
Drilling in karst regions

• Create additional permitting and operational requirements to safeguard groundwater in karst regions (§22-6A-3a);

• Identification of a "karst region"
  • Coordination with WVGES
  • Tax-district map in progress
• Pre-application testing for surface or sub-surface features
• Baseline water testing
  • Pre-drill suite
• Prohibition on pits and impoundment construction
• Drilling procedures in voids
Groundwater supply wells

- Describe a water flow and quality testing procedure for landowners (within 1,500 ft of a groundwater supply well) who request to have their drinking water wells sampled (§22-6A-8);

- "Water flow" testing consists of a step-drawdown and recovery analysis to derive a "yield" of the well
- "Quality testing" is the pre-drill analytical suite
Groundwater supply wells

- Protect groundwater aquifers by establishing aquifer testing protocols that must be performed before potential water supply wells can be used to support hydraulic fracturing activities;

- Aquifer test performed by qualified groundwater specialist
  - Groundwater basin characterization
  - Step-drawdown
  - Constant rate drawdown at specified withdrawal rate
  - Recharge analysis
  - At least one groundwater monitoring station
- Submitted with water management plan
Plugging of horizontal wells

• *Define procedures to be used when plugging the horizontal component of directionally drilled wells (§22-6A-13);*

• Where the well does not penetrate workable coal:
  • Fill the lateral with water, cement or other non-porous material, or
  • Install a permanent bridge at the point at which the lateral intersects the producing formation
• Set a cement plug at the top of the producing formation
• Plug the vertical component
Well communication

- Prescribe a process to identify potential pathways for well communication during hydraulic fracturing activities and respond to those situations should they arise;

- Area of review to identify potential conduits
  - 500' from surface location
  - 500' along lateral
- Notify operators of active wells within AOR
- Plug, re-plug or monitor abandoned wells during completion operations
- Monitor pressures
- Suspend operations, relieve pressure, notify DEP
Drilling standards

• Establish a borehole accuracy requirement to be adhered to while drilling;

  • Laterals shall be drilled within 50' (laterally) of the permitted borehole
    • Excluding the curve
  • Borehole shall not deviate (vertically) outside the target formation after intersection
Drilling standards

• *Ensure cement and formation integrity by allowing for integrity testing for all casing strings;*
  
  • Add FIT testing option to freshwater and coal protection strings
  • FIT testing option already exists on the intermediate string

• *Extend freshwater casing to address unstable borehole conditions*
  
  • e.g. Redrock
Construction standards - Pads

- Establish requirements for compaction standards;
  - 95% Standard Proctor density
- Establish requirements for well pad berms as containment structures;
Construction Standards - Pits

• Formalize minimum construction standards for centralized waste pits;
  
  • Siting
  • Compaction
  • Liners and leak detection
  • Groundwater monitoring

• Establish minimum construction standards for associated waste pits

• See above
Reporting requirements

• Expand the annual production reporting requirements to include produced water;

• Modify reporting requirements for fracturing additives in response to programmatic changes in FracFocus.org (systems approach);

• Clarify the definition of natural gas liquids to reduce confusion in annual reporting;
Administrative changes

• Allow for the transfer of well-work permits;