



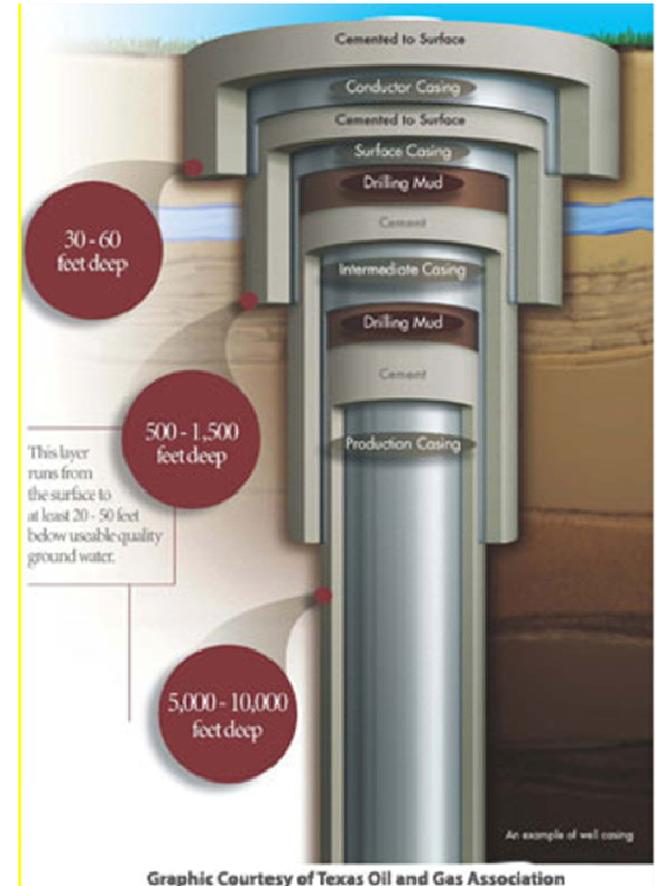
American Water Works  
Association

# Water Quality Monitoring

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# Overview

- Potential Impacts
- The Key Questions
- State Requirements
- AWWA Key Position Points
- Future Focus



# Potential Impacts

- Groundwater contamination
- Surface water contamination
- Land use / stormwater quality
- Induced seismicity (from disposal wells)
- Water use volume / timing



# The Key Questions

- What to monitor for?
- Where to monitor?
- How often?



# State Requirements

- Pre- and post-drill sampling is required in a number of states
- Variability of requirements:
  - Wells / sources are generally those within a specified radius (1,000ft, ¼ mile, etc.) of wellbore
  - Generally requires 1-3 samples, but some require more
  - Limited agreement on *what* should be sampled for



# State Examples (not exhaustive)

State	Where?	When?	What?	Reference
Illinois	1,500ft radius	Pre: 3 times Post: 3 times	Ph, TDS, gasses, conductance, metals, BTEX, gross alpha/beta	255 ILCS 732
North Dakota	2,640ft radius	Pre: 1 time within 1 year	“Certified water quality and quantity test”	ND 38-11.1-06
Colorado	2,640ft radius	Pre: 1 time (up to 4 wells) Post: 2 times	Ph, conductance, TDS, gasses, alkalinity, cations, bacteria, BTEX, etc.	CO Rule 609
Pennsylvania	2500ft radius	Presumed liability*	Recommended: Alkalinity, dissolved gasses, BTEX, metals, TDS/TSS, pH, conductance, hardness, etc.	PA Act 13

\* Some presumed liability states (PA included) do not have specific monitoring requirements, but do put the burden of proof on the oil and gas company to disprove alleged contamination, and therefore most companies will conduct pre- and post- drilling monitoring

# Limitations of State Requirements

- Natural day-to-day and seasonal variability means that 1-3 samples may not accurately reflect water quality in some situations
- Limited public access to results (concerns often relate to liability or concern over future sales of property due to less than ideal water quality)
- If a utility's source is not in the radius, the O&G company does not generally monitor it – vast majority are private wells



# Limitations of State Requirements

- Limited agreement on what should be sampled for – are there useful indicators?
- Sampling around individual wells pre- and post- drilling does not assess cumulative impacts across multiple wells (e.g. across a watershed)
- What should be done when water quality is poor before drilling begins?



# Key Position Points

1. Protection of public water supplies is paramount for all industrial activities
2. Baseline conditions should be established, with frequent monitoring to detect any changes and take corrective action as needed
3. A secure energy future does not mean choosing between energy development and clean water. We can and should have both.



# Future Focus - Monitoring

1. Need better understanding of what to monitor for, how often, when, and how
2. Need to understand differences between public water systems and private wells in this context
3. Need to better collaborate to ensure that proper monitoring is conducted and to reduce risks of incidents that may impact quality or availability



# Questions?

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