



Federal Register

Friday,
July 25, 2008

Part II

Environmental Protection Agency

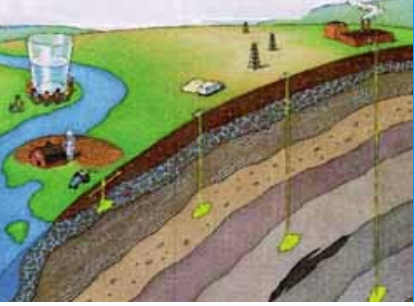
40 CFR Parts 144 and 146
Federal Requirements Under the
Underground Injection Control (UIC)
Program for Carbon Dioxide (CO₂)
Geologic Sequestration (GS) Wells;
Proposed Rule



Geologic Sequestration of Carbon Dioxide EPA Proposed Rulemaking

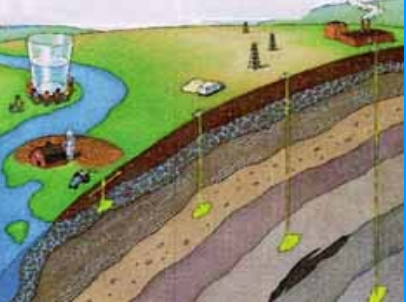
November 17, 2008

Steve Heare
U.S. Environmental Protection Agency
Office of Ground Water and Drinking
Water



EPA's Proposed GS Rule: *Outline*

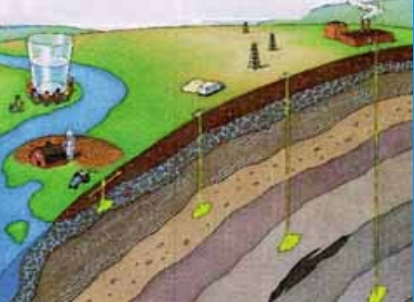
- Public Comments Received
 - Public Hearings
 - Docket Content
- Schedule
- Next Steps



EPA's Proposed GS Rule:

Goals of the Rule Making Process

- Develop proposed rules that would protect underground sources of drinking water under SDWA
- Tailor existing UIC program requirements to unique needs of GS of CO₂ for long-term storage
- Ensure adaptive approach to incorporate new data
- Use existing experience with industrial and enhanced oil/gas recovery injection



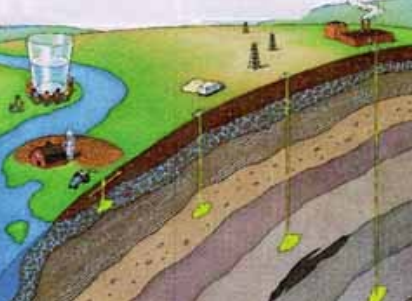
Public Comment Period

☰ Public Comment Period

- Began July 25, 2008
- Ends November 24, 2008

☰ Comments

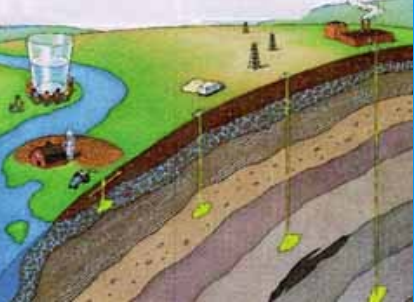
- Public comments form the basis of the next publication
- Commenters may submit data along with comments
- The most helpful comments suggest alternative approaches, if appropriate



Public Hearings

- Two public hearings held in Chicago, IL, on September 30, 2008 and in Denver, CO on October 2, 2008 from 9 AM to 5 PM
- Attended by Representatives from utilities, industry, non-governmental organizations, academia, and the public
- Attendance in Chicago, IL: 51 attendees with 11 commenting
- Attendance in Denver, CO: 59 attendees with 19 commenting
- Majority of commenters supported EPA's efforts to proposed regulations for Geologic Sequestration (GS) injection wells
- Some commenters encouraged the Agency to adopt a more holistic approach

Attendee	Chicago	Denver
<i>Oil and Gas</i>	9	7
<i>Industry</i>	14	9
<i>Other Industry</i>	6	9
<i>Government (Federal, State)</i>	9	9
<i>Environmental Groups</i>	6	6
<i>Academia</i>	0	11
<i>Other</i>	8	9



Sample of Comments from Chicago Public Hearing

- ☐ Regulations should not stigmatize the GS process
- ☐ Injection should not be limited to formations below the lowermost USDW
- ☐ 50-year post-injection site care period is too long
- ☐ Regulations need to be flexible; site-specific characteristics with performance-based measures are most appropriate
- ☐ RCRA/CERCLA liability needs clarification
- ☐ Require full compliance with Class VI wells and do not grandfather existing Class I, II, and V wells



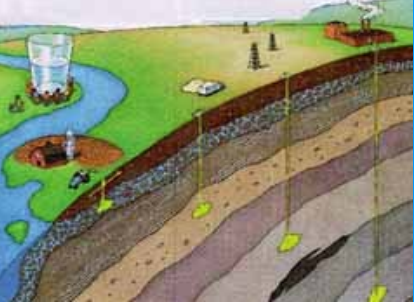
Sample of Comments from Chicago Public Hearing (cont'd)

☐ Well Construction

- Decision to require corrosion resistant materials should be site-specific
- Long string casing should not be required along the entire length of the injection well

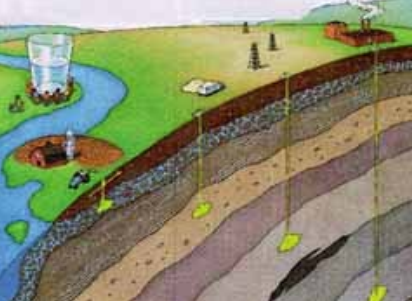
☐ Monitoring techniques should be site-specific and performance-based

☐ Permit writers should provide numerous opportunities for public to comment; use a transparent process



Sample of Comments from Denver Public Hearing

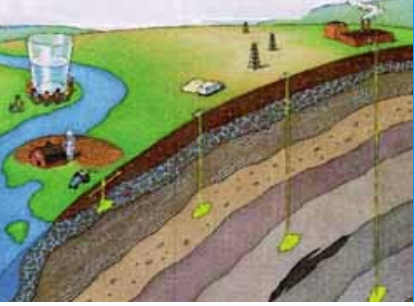
- ☐ Monitoring requirements are too stringent
- ☐ Underground injection of CO₂ could potentially cause contamination
- ☐ Injection should not be limited to formations below the lowermost USDW
- ☐ 50 year default period during post-injection site care is too long
- ☐ Funding is insufficient to manage GS programs
- ☐ EPA should allow options for Class VI only primacy
- ☐ Agency should provide for full public disclosure of new information; request for an extended commenting period due to availability of new information



Public Docket Comments

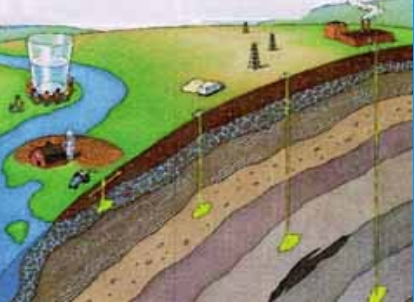
- ☰ Comment period continues through November 24, 2008
- ☰ Public Docket is available at www.regulations.gov
- ☰ As of November 3, 2008, 16 unique parties have commented including a total of 37 comments
- ☰ Some commenters from the public hearings have submitted their testimony to the online docket

GS Rule Commenters	
States	1
Local	1
Water utilities	1
Electric utilities	2
Oil and gas	2
Other industry	2
Environmental groups/NGOs	1
Citizens/public	3
Academia	1
Other/unknown	2
Total commenters as of 11/3/08	16



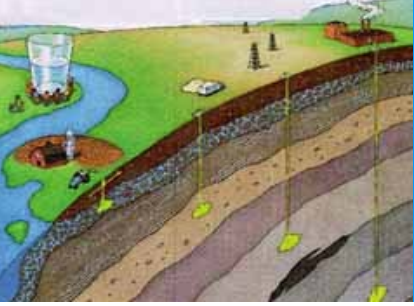
Sample of Comments from Public Docket

- ☐ Consider GS above USDWs or in aquifers fresher than 10,000 ppm TDS to increase CO₂ storage capacity
- ☐ Oppose the rule and the need for GS on various grounds including technical capabilities of EPA staff, safety, cost, lack of statutory authority, and insufficient evidence linking CO₂ and climate change.
- ☐ Consider concerns about GS risk –potential for asphyxiation from leaks, Lake Nyos type events, induced seismicity



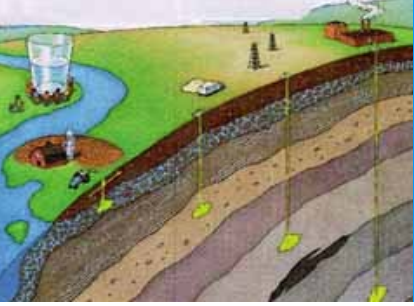
Sample of Comments from Public Docket (cont'd)

- ☐ Use flexibility in setting monitoring requirements
- ☐ Questions for EPA about how GS works
- ☐ Do not require down-hole shutoff devices
- ☐ 50 year default period during post-injection site care is too long
- ☐ Advocate use of Class II requirements for GS wells; grandfather construction, operating, and MIT requirements in converted wells
- ☐ Construction requirements are too strict



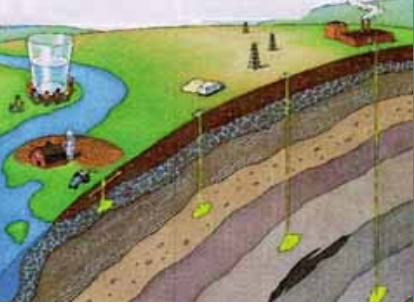
EPA's Proposed GS Rule: *Schedule*

Activity	Milestone
Technical Workshops, Data Collection & Analysis	Ongoing
Stakeholder Meetings	December 2007/February 2008
Interagency Review of Proposed Rule	Late May - Early June 2008
Administrator's Signature of Proposed Rule	July 15, 2008
Public Comment Period for Proposed Rule	July 25 – November 24, 2008
Notice of Data Availability (if appropriate)	2009
Final UIC Rule for GS of CO ₂	Late 2010 / Early 2011



Next Steps

- ☐ Prepare for public comment response
- ☐ Continue synthesis and analysis of statutory provisions (RCRA, CERCLA, etc.) as they may relate to GS
- ☐ Develop guidance and/or supporting documents for the next FR notice



Thank you!

More information about the UIC Program

- EPA Geologic Sequestration of Carbon Dioxide Website – http://www.epa.gov/safewater/uic/wells_sequestration.html
- Code of Federal Regulations: Underground Injection Control Regulations 40 CFR 144-148 – http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=d6ee71a544eca89c533c825135913f13&c=ecfr&tpl=/ecfrbrowse/Title40/40cfrv22_02.tpl
- Written comments may be submitted at: www.regulations.gov (Docket I.D. EPA-HQ-OW-2008-0390)