

# Hydraulic Fracturing

## Needs Assessment: Permitting, Data Management, Operations

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# FRAC ACT

- Fracturing Responsibility and Awareness of Chemicals (FRAC) Act
- Introduced June 9, 2009 in both US Senate and US House
- A bill to amend the Safe Drinking Water Act to repeal a certain exemption for hydraulic fracturing, and for other purposes.
- Inserts the following Requirement: any person using hydraulic fracturing disclose to the State the chemical constituents (but not the proprietary chemical formulas) used in the fracturing process

# FRAC ACT

- The State shall make available to the public the information contained in each disclosure of chemical constituents by posting the information on an appropriate Internet website.
- Requires the release of the proprietary chemical formula or specific chemical identity of a trade-secret chemical used in hydraulic fracturing as necessary for emergency or first-aid treatment

# FRAC ACT: Results

- Places Hydraulic Fracturing under the UIC (Underground Injection Control) program
- Requires reporting of all fluids used during Hydraulic Fracturing job
- Requires disclosure of chemical constituents to UIC Regulatory Program
- Requires UIC Regulatory Program to publish constituents used
- Requires release of proprietary chemical makeup incase of emergency or medical need

# FRAC ACT: Current Status

- Request from Colorado Governor Ritter for additional study on Hydraulic Fracturing to sponsoring Congresswoman has put a hold on legislation
- EPA is determining path forward
- Funding for Study has been included in an appropriations bill.

# FRAC ACT: May Result In

- Special permitting requirements to perform Hydraulic Fracturing under UIC Program
- May slow issuance of permits from State Oil & Gas agencies due to added load
- May require pre and post reporting of chemicals proposed and used during the Fracturing
- May require additional tracking of disposal of Flowback waters depending on program being reported to

# Purpose

- Presentation of Hydraulic Fracturing functional program needs to define electronic data tracking and submissions to accomplish management of stimulations on Wells

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# Need

- Solicit input from stakeholders to shape and define data management needs
- Identification of “Areas” of most interest
- Identification of Potential Pilot State Participation
- Integration with existing systems?
- Address potential changes mandated from legislation or program changes



# Stimulation Application

Need: Maps of	Comment	Data	Reg Only
Application Submission	More Formal Process, Public Notice?		
Proppants			
Chemicals Proposed	Trade Names/Compositions		
Volumes Proposed			
Stages/Schedule			
Fluids Onsite			
MSDE Sheets			
Water Access			



# Stimulation Application – Geology

Need: Information Submitted	Comment	Data	Reg Only
Structural Geology			
Injection Zone Geology	Maps? Cross-Sections?		
Confining Zone(s) Geology			
Faults – Existing?	Location/Orientation how submitted? How Determined to be non-transmissive?		
Reservoir Parameters	Depth, areal extent, thickness, mineralogy, porosity, permeability, capillary pressure, etc.		
Cores			



# Stimulation Application – Geology

Need: Information Submitted	Comment	Data	Reg Only
Zones			
Well Logs and Tests			
Geomechanical Information on Fractures			
Stress			
Ductility			
Rock Strength			
In situ Fluid Pressures			



# Stimulation Application – Well Completion

Need: Proposed Construction	Comment	Data	Reg Only
Well – Location			
Well Design	Horizontal? Multiple Laterals?		
Casing, Tubing & Packer	Setting Points		
Surface: Wellhead			
Perforations			
Stage Location			

# Stimulation Application – Risk Assessment

Need: Actions	Comment	Data	Reg Only
Risk to USDW			
Risk to Health			
Flowback Properties			
Formation Compatibility			
Water Compatibility			



# Stimulation Application – Approval

Need: Process	Comment	Data	Reg Only
Meets Criteria	List of Criteria?		
Proposed Operating Constraints			
Permit Issuance			
Data Migration	Should application data be migrated to production data?		
Public Notice	Website?		
Medical Community			

# Permit Management

Need: Revision Process	Comment	Data	Reg Only
Permit Authorizations			
Modifications			
Requests			
History			
Wells Associated			



# Post Stimulation Reporting

Need:	Comment	Data	Reg Only
Location of Stages			
Volumes Used			
Chemicals Used			
Pressure Responses			
Steps in Stages			
Below Land Surface Locations	Vertical and Horizontal Considerations		
Monitoring	Micro-seismic, Tracer		



# Post Stimulation Reporting

Need:	Comment	Data	Reg Only
Chemicals Onsite			
Chemicals Removed			
Surface Spills			
Remediation			
Flowback Volumes			
Flowback Disposal	Tracking of where sent?		
Produced Water Disposal			
Data Transfer	XML Process? CROMEER Issues?		



# Post Stimulation: Geology

Need:	Comment	Data	Reg Only
Zones Stimulated			
Success of Stimulation			
Reservoir Parameters			
Well Logging	Raw Data or Results?		
Well Testing			



# Monitoring

Need:	Comment	Data	Reg Only
Onsite Inspections			
Changes over Time	Baseline Requirements Pre-Frac		
Post Treatment Pressures			
Post Treatment Water Quality			



# Compliance/Enforcement

Need:	Comment	Data	Reg Only
Operating Conditions			
Pressures			
Rates			
Volumes			
Enforcement Actions			
Fines			
Payments			



# Additional Reporting

Need:	Comment	Data	Reg Only
Submissions	Electronic Submission from Regulated Community		
EPA	Submission to National Oversight		
Medical Community			
Website Updates			



# Emergency & Remedial Action

Need:	Comment	Data	Reg Only
Financial			
Location of Plan			

# Other Considerations

Need:	Comment	Data	Reg Only