

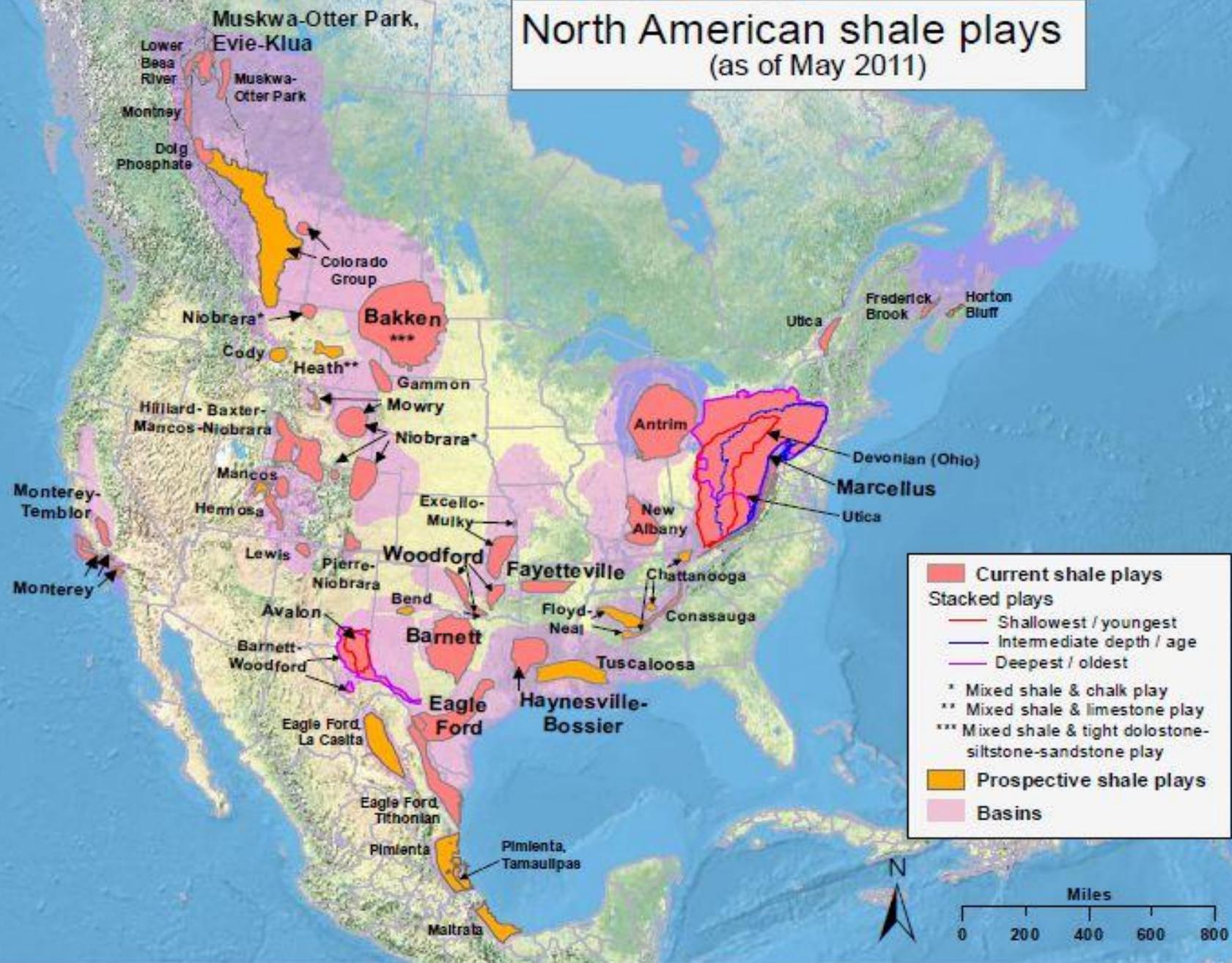


Hydraulic Fracturing Disclosure Rules

Development and State Approaches

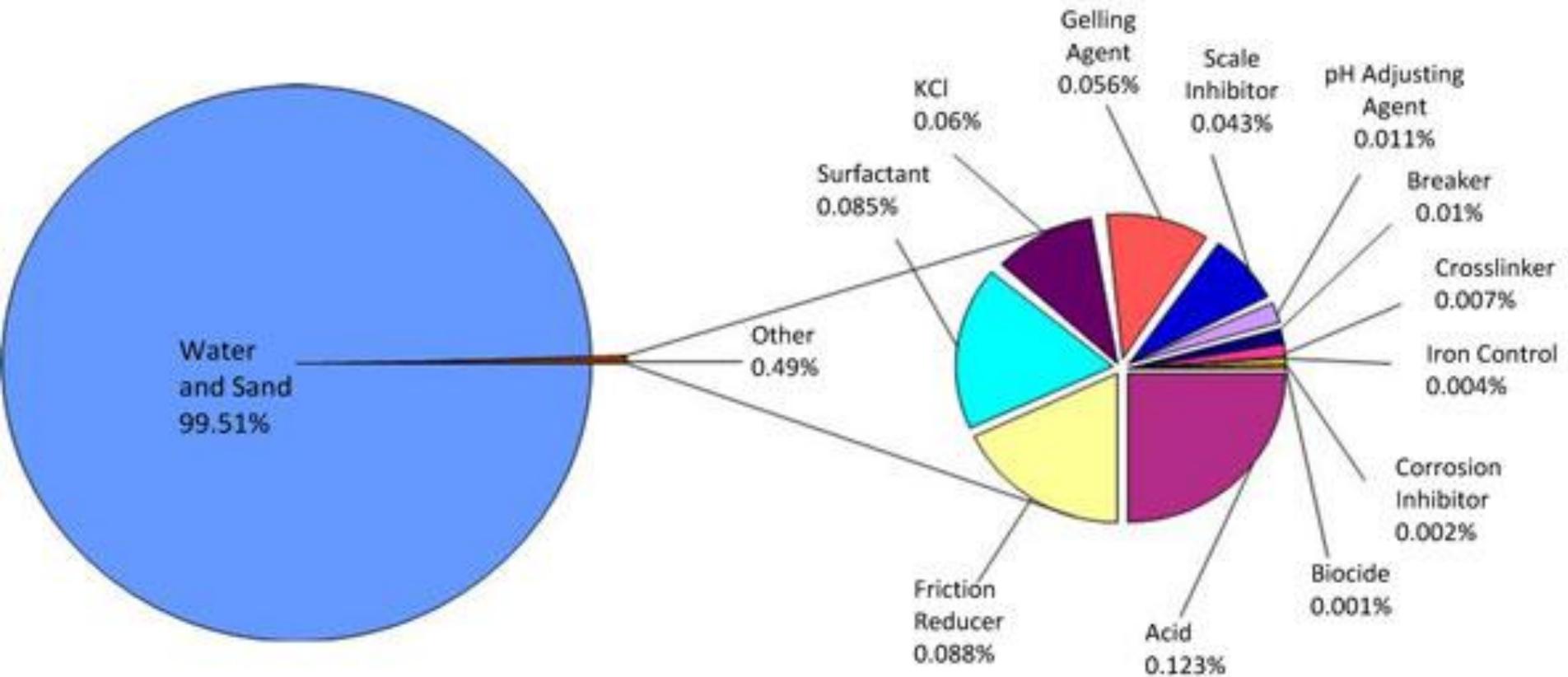
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North American shale plays (as of May 2011)



- ▶ **1947:** First well receives hydraulic fracturing treatment to stimulate natural gas development (Grant County, Kan.).
- ▶ **November 1974:** [Safe Drinking Water Act](#) (SDWA) is signed into law. Establishes new standards and regulations to protect underground sources of drinking water (USDW). Despite having been utilized commercially for a quarter century, hydraulic fracturing was never considered for regulation under SDWA.
- ▶ **June 1986:** SDWA is [amended](#) to regulate more than 100 specific contaminants. Hydraulic fracturing, now commercially utilized for nearly four decades, is never considered for regulation.
- ▶ **1994/1995:** The Legal Environmental Assistance Foundation (LEAF) petitions the EPA to withdraw approval of Alabama's underground injection control (UIC) program, arguing that the Safe Drinking Water Act (SDWA) required that the federal EPA regulate hydraulic fracturing. Then-EPA Administrator (and later President Obama's climate czar) Carol Browner [responds](#) with a clear message: "EPA does not regulate – and does not believe it is legally required to regulate – the hydraulic fracturing of methane gas production wells under its UIC program [under the Safe Drinking Water Act]." In that same letter, Browner says there was "no evidence" of hydraulic fracturing contaminating ground water.
- ▶ **August 1996:** SDWA is [amended](#) once again to emphasize sound science and standards. Hydraulic fracturing is not considered for regulation.
- ▶ **1999:** In response to the *LEAF* decision, Alabama promulgates new rules and regulations on hydraulic fracturing, which the EPA approves one year later. LEAF appeals. The Court ultimately [sides with the EPA and the State Oil and Gas Board of Alabama](#), agreeing that the state's regulatory system is an "effective program to prevent endangerment of underground sources of drinking water."
- ▶ **August 2002:** EPA releases a draft of its study of hydraulic fracturing, which affirms that the technology does not pose a risk to drinking water.
- ▶ **June 2004:** EPA completes its [four-year study](#) on hydraulic fracturing (which began under the previous administration), concluding that the technology poses only a "minimal" threat to water supplies and that there are "no confirmed cases" linking hydraulic fracturing to drinking water contamination.
- ▶ **July 2005:** The U.S. Congress passes the [Energy Policy Act of 2005](#) (signed in August by the President), which includes a provision codifying that Congress never intended for hydraulic fracturing to be regulated under the Safe Drinking Water Act (as also evidenced by decades of precedence.)

Typical Fluid Constituents



Status of State Regulation

- ▶ Many Oil and Gas producing states have enacted or are in the process of enacting some form of reporting related to well completions including hydraulic fracturing
- ▶ Groundwater Protection Council & IOGCC – www.fracfocus.org
- ▶ STRONGER – non-profit, stakeholder driven with expertise in regulatory review and comment is driving good regulation

Historical Development of HF Regulation

- ▶ Wyoming first* – in response to direction from 2008 State Legislature re: carbon sequestration unitization rule and included chemical disclosure of hydraulic fracturing fluids

State	Online?	Details For All Chemicals?	Trade Secret Exemptions
Pennsylvania	No	Hazards Only	Yes
Arkansas	Yes	All	Yes
Michigan	Yes	Hazards Only	Yes
Texas	Yes	All	Yes
Wyoming	Yes	All	Yes

Alabama – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Ala. Admin. Code r.400-3-8-03, Hydraulic Fracturing of Coal Beds	In force	Applications for approval to fracture a CBM well between 400 and 600 feet below ground surface must include a program describing the proposed fracturing operation that takes into consideration the "type fluids and materials that are to be utilized;" the state "may request the submittal of additional information."	At the time approval of the HF operation is sought.
Ala. Admin. Code r.400-1-4-08, Report of Well Treatment		Regulations require filing of a report "setting forth in detail the method used in treating the well." The applicable form requires the party filing to "Give full details of treatment."	Report due within 30 days of fracturing.
Ala. Admin. Code r.400-1-10-.01, Monthly Reports		Operator must file a monthly report, which includes the volume of water and other fluids injected.	Monthly report due on the 28th day of the following month.

Arkansas

- ▶ AOGC General Rule B-19
- ▶ Became effective Jan. 15, 2011
- ▶ Work started on it in late Spring 2010
- ▶ Casing / Chemical Disclosure / Confidentiality
- ▶ Service Providers have to register with AOGC
- ▶ Pending update re: STRONGER Comments
 - Pre-HF Notice
- ▶ Serves as the basis for rules in many other States

Arkansas – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
<p>Ark. Oil & Gas Comm'n General Rules and Regulations, Rule B-19, Requirements for Well Completion Utilizing Fracture Stimulation</p>	<p>In force</p>	<p>The operator shall submit a well completion report that includes (1) the types and volumes of the base fluid and proppant used for each stage of the treatment; (2) a list of all additives used during the HF treatment specified by type; (3) the actual rate or concentration for each specific additive; and (4) the chemical constituents and associated CAS numbers as provided by the service company. (If a constituent identity is trade secret, the service company is entitled to withhold it from disclosure to the operator.) If the operator uses an additive not provided by the service company, the operator must provide a list of all chemical constituents and associated CAS numbers in each such additive used.</p> <p>Service companies must maintain and submit "master lists" of all (1) base fluids; (2) all additives; and (3) all chemical constituents and associated CAS numbers (if a constituent identity is trade secret, the service company may use the chemical family name and CAS number - the constituent identity will be held confidential by the Director).</p> <p>All information required by a health care professional must be supplied immediately upon request by the person performing the HF treatment.</p>	<p>Within the time period specified in General Rule B-5 (upon completion or recompletion).</p>

Colorado

- ▶ Wide variety of covered issues
- ▶ Probably the most complete set of rules to date
- ▶ Rule 205 inventory chemicals
- ▶ Rule 205A Disclosure – Applicable April 1, 2012
- ▶ Rule 305.e.(1)A Landowner Notice of Intent to Hydraulic Fracture
- ▶ Rule 316C 48–Hour Notice of Treatment to Local Governmental Designee
- ▶ Rule 317 Well casing and cementing; Cement bond logs
- ▶ Rule 317B setbacks and precautions near surface waters and tributaries that are sources of public drinking water
- ▶ Rule 341 monitor pressures during stimulation
- ▶ Rule 608 Special requirements for CBM wells
- ▶ Rules 903 & 904 pit permitting, lining, monitoring, & secondary containment
- ▶ Rule 906 requires notice to Commission, CDPHE and the landowner of any spill that threatens to impact any water of the state

Colorado – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
2 CCR 404-1 s. 205A	In force	Service companies and vendors are required to provide the operator with the following information for each frac job: (1) the total volume of water and total volume of base fluid used in the hydraulic fracturing treatment; (2) each hydraulic fracturing additive and the trade name, vendor, and brief description of the intended use or function of the additive; (3) each chemical intentionally added to the base fluid; (4) the maximum concentration of each chemical intentionally added to the base fluid; and (4) the CAS number for each chemical added to the base fluid. The operator is then required to complete a FracFocus registry form. Chemical constituents need not be tied to additives.	Vendor or service provider must provide to operator within 30 days of completion of hydraulic fracturing treatment and in no case later than 90 days after commencement of hydraulic fracturing treatment. Operator must submit information to FracFocus within 60 days of completion of hydraulic fracturing treatment, and in no case later than 120 after commencement of hydraulic fracturing treatment.

The vendor, service provider, or operator may claim trade secret protection for a chemical identity or concentration and withhold the information from disclosure, and must submit a Form 41 claim of entitlement providing information regarding the basis for the trade secret claim.

Idaho

- ▶ Substantial Update effective December 21, 2011
 - ▶ Update of rules from 1960s
 - ▶ Provides for confidentiality subject to emergency response/medical needs
 - ▶ Similar in scope to Ohio's overall update
 - ▶ Wyoming and Colorado served as model for update
- 

Idaho – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
IDAPA 20 Title 07 Chapter 2 s 20.07.02	In force	Operator shall provide the Commission with information on (1) the source of the base stimulation fluid, (2) the stimulation fluid identified by additive type, (3) the chemical compound name and CAS number as found on the MSDS, (4) the proposed rate or concentration for each additive, and (5) the proposed rate or concentration in the overall stimulation fluid for each chemical compound listed on the MSDSs.	Included in application for Permit to Drill or in Application to Amend Permit to Drill.

Indiana – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Emergency Rule LSA Document #11-432(E)	In force	Operator must provide information on, among other things, (1) the source and proposed volume of base stimulation fluid, (2) the type and amount of proppant, (3) the additive rate or concentration, (4) additive product name as indicated on MSDS, (5) a description of the type or purpose of each additive and (6) a copy of any MSDS for each additive.	As part of an application for coal bed methane well permit; and A well stimulation report containing information regarding additives actually used must be submitted when the well completion or recompletion report is filed under 312 IAC 16-5-17.

Kansas

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Kansas Admin. Reg. 82-3-130, Completion Reports	In force	Operator shall file an affidavit of completion, which includes the amount and kind of material used in fracturing.	Within 120 days of the spud date

Louisiana

- ▶ Statewide Order No. 29-B
 - ▶ Disclosure of materials used
 - ▶ Confidentiality – subject to disclosure of chemical family name
 - ▶ Disclosure to health care professionals
 - ▶ Allows use of FracFocus.org

 - ▶ Effective October 20, 2011
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Louisiana – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
LAC 43:XIX 118	In force	Following completion of a hydraulic fracturing stimulation operation, the operator shall disclose: (1) the types and volumes of the base fluid; (2) a list of all additives; (3) for each additive type, the trade name and suppliers of all the additives; (4) a list of MSDS chemical ingredients and associated CAS numbers; (5) maximum concentration of each MSDS-level ingredient within the additive; and (6) the maximum concentration of each MSDS-level ingredient within the overall hydraulic fracturing fluid. These disclosure requirements may be satisfied by reporting to FracFocus and submitting a statement to Louisiana Department of Natural Resources stating that the operator has done so.	Within 20 days after completion.

Michigan

- ▶ Instruction 1–2011
 - ▶ Effective June 22, 2011
 - ▶ Addresses water withdrawals
 - ▶ Simple & Effective Disclosure Requirement
 - How much water
 - MSDS sheets for materials used and volumes of each
 - Well pressure
 - Service Company tickets
- 

Michigan – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
<p>Mich. Admin. Code r.324.511, Change of Well Status</p> <p>Supervisor of Wells Instruction 1-2011</p>	<p>In force</p>	<p>Requires an "application for change of well status" prior to any "additional acid or other stimulation treatment." The application must "set forth, in detail, the kind of oil and gas operation to be accomplished and the plan for protecting all oil, gas, brine, or fresh water strata the well has penetrated."</p> <p>An operator using "high volume hydraulic fracturing well completion" must include in the Record of Well Completion (form EQP 7130) the MSDSs for all chemical additives used and the volume of each additive used, a copy of the service company records and associated charts showing fracture volumes, rates and pressures, the annulus pressures recorded during fracture operations and the total volume of flowback water (formation and/or treatment water) as of the date of the completion record submittal.</p>	<p>Prior to stimulation</p> <p>As part of the Well Completion Report</p>

Mississippi

- ▶ Currently proceeding with rulemaking
 - ▶ Statewide Rule 26 (Docket No. 228-2012-D)
 - ▶ Similar to Louisiana and Arkansas
 - ▶ Imposes well construction requirement
 - ▶ Provides for chemical disclosure
 - Subject to claims of confidentiality
 - Healthcare providers receive the information in any event
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Montana

- ▶ Effective August 27, 2011
 - ▶ Casing/Disclosure/Confidentiality
 - ▶ Very similar to Arkansas less service company registration
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Montana – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
New Rules I-V	In force	<p>New Rule I (36.22.608) requires a description of the following HF information in the permit application: (1) estimated total volume of treatment to be used, (2) trade name or generic name of the principal components or chemicals, (3) estimated volume of the principal components (viscosifiers, acids or gelling agents), (4) estimated weight or volume of inert substances such as proppants, and (5) maximum anticipated treating pressure or a written description of the well construction specifications demonstrating that the well is appropriately constructed for the proposed HF treatment.</p> <p>New Rule II (36.22.1015) requires the owner/operator to submit the following HF-specific information via completion report: (1) a description of the stimulation fluid identified by additive type, (2) the chemical ingredient name and the CAS number for each ingredient of the additive used, and (3) the rate or concentration for each additive. The administrator may waive all or a portion of the required disclosures if the owner/operator posts the required information to the GWPC's FracFocus online database.</p>	<p>As part of the application for permit to drill.</p> <p>Upon completion of the well.</p>

New Rule III (36.22.1016) provides that an owner/operator may withhold trade secret chemical identities and instead identify trade secret chemicals by chemical family name. Trade secret information must be disclosed to the board or staff if necessary to respond to a spill or release of the trade secret product. Board members, staff or any third party receiving trade secret information on behalf of the board may be required to execute a nondisclosure agreement. The Administrator's office has indicated that non-MSDS constituents need not be tied to additives and that the reporting requirements do not extend to chemicals that are not intentionally added.

New Mexico

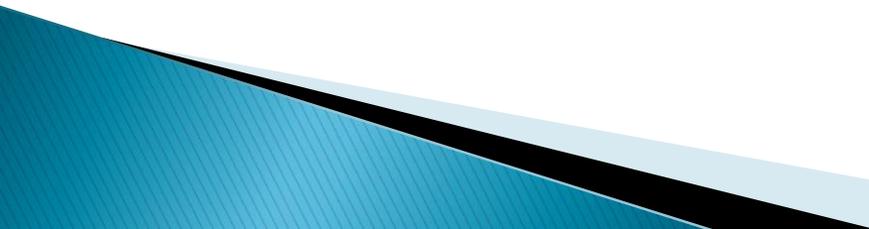
Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
New Mexico Admin. Code 19.15.16.18, Log, Completion and Workover Reports; Form C-105	In force	Operators must signify on form C-105, or alternatively on form C-103, whether the well has been hydraulically fractured. For a hydraulically fractured well, operator shall complete and file an HF disclosure form (which is comparable to the form prescribed by the FracFocus Registry website) within 45 days after completion of the well. The disclosure form does not require disclosure beyond the MSDS level. Reporting or disclosure of proprietary, trade secret, or confidential business information is not required.	Adopted rules require completion report within 45 days after the completion or hydraulic fracturing of a well.

North Dakota

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
N.D. Admin. Code 43-02.-03-27.1	In force	The adopted rules require the owner, operator, or service company to post on the FracFocus Chemical Disclosure Registry all elements made viewable by the FracFocus website. The rules do not require the submission of trade secret or confidential business information.	Within 60 days after the hydraulic fracturing stimulation is performed.

Ohio

- ▶ Effective June 30, 2010.
 - ▶ First major revision of oil and gas rules in 25 years.
 - ▶ Key drivers for new regulations:
 - Address present day health, safety and social issues related to oil and gas development
 - Provide funding to administrate the regulatory program
 - Ensure to rational citizen public faith and trust in the state regulatory program

 - ▶ Key changes to Chapter 1501 of the revised Ohio Code include
 - Site Review prior to approval
 - Opportunity for noise mitigation requirements
 - Setbacks from occupied dwellings and other wells without approval
 - Mandatory pooling requirements
 - MSDS Reports Required
 - Temporary Inactive Well Status Requirements
 - Stimulation Record Requirements
- 

Ohio – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Ohio Rev. Code § 1509.10	In force	Requires submission of a well completion record that includes "the type and volume of fluid used to stimulate the reservoir" as well as a copy of the log from the stimulation of the well, a copy of the invoice for each procedure used and a copy of the pumping pressure and rate graphs.	Within 60 days of the completion of drilling operations.

Oklahoma

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Okla. Admin. Code s. 165:10-1-6(g), Duties and authority of the Conservation Division	In force	Upon request, "service companies or other persons shall furnish and file reports and records showing . . . hydraulic fracturing."	Upon request.
Okla. Admin. Code s. 165:10-3-25, Completion Reports	In force	Completion Report shall be filed with the Commission on Form 1002A Form 1002A includes chart calling for "Completion & Test Data by Producing Formation - FRACTURE TREATMENT (Fluids/Prop Amounts)".	Within 30 days after completion of operations regardless of whether or not the well was completed as a dry hole, producer, injection, disposal or service well. Subject to fine of \$250.00.
Okla. Admin. Code s. 165:10-3-10, Well Completion Operations	In force	Operator required to submit to the FracFocus Registry website or the Commission HF disclosure information, including total volume of base fluid used in HF; the trade name, supplier, and general purpose of each chemical additive; and for each ingredient used in any chemical additive, the identity, CAS number, and maximum concentration as the percent by mass in the HF fluid as a whole. If certain chemical information is entitled to trade secret protection under the Uniform Trade Secrets Act, the submission to FracFocus may note the proprietary nature of that chemical information instead of disclosing the protected information.	Within 60 days after completion of hydraulic fracturing operations.

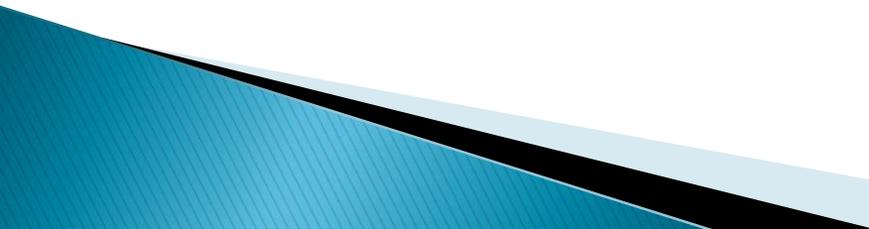
Pennsylvania

- ▶ Effective February 2011
- ▶ PA DEP promulgated revisions to Chapter 78 of 25 Pa. Code to address issues related to Marcellus Shale development and hydraulic fracturing
- ▶ Some key concerns that prompted the rules were:
 - Potential groundwater contamination from fracturing
 - Groundwater contamination caused by methane intrusion
 - Chemical Disclosure of fracturing additives
- ▶ Key changes to the rules include
 - Casing and cementing plan required with permit application
 - Pressure testing prior to completions
 - Control and disposal plan with application
 - Pre-drilling and pre-alternation
 - Quarterly mechanical integrity tests
 - Stimulation record requirements
 - Maintenance of chemical records

Pennsylvania – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Pa. Statutes Title 58 § 3222	In force	Operator shall file a completion report with PADEP containing the stimulation record including: descriptive list of the chemical additives in the stimulation fluids, the trade name, vendor, and brief descriptor of the intended use or function of each chemical additive, the maximum concentration in percent by mass of each intentionally added chemical, and the total volume of the base fluid. Operator may designate specific portions as containing a trade secret or confidential proprietary information, and PADEP shall prevent disclosure of the trade secret or confidential proprietary information to the extent permitted by the Pennsylvania Right-to-Know law.	Within 30 days after completion of the well.
Pa. Statutes Title 58 § 3222.1	In force (subject to promulgation of implementing regulations)	In addition, the operator shall complete a FracFocus registry form and post the form on FracFocus. PADEP will promulgate regulations for the format of the FracFocus registry form, but the required disclosure will not link chemicals to their respective hydraulic fracturing additive. If the vendor, service provider or operator claims that the specific identity of a hydraulic fracturing additive, chemical, concentration, or any combination thereof, are a trade secret or confidential proprietary information, the operator of the well must indicate that on the form and the vendor, service provider or operator shall submit a signed written statement that the record contains a trade secret or confidential proprietary information. A vendor, service company or operator shall not be required to disclose trade secrets or confidential proprietary information on FracFocus.	Within 60 days following the conclusion of hydraulic fracturing.

Tennessee

- ▶ In September, the Tennessee Oil & Gas Board finalized its efforts to adopt regulations related to hydraulic fracturing and chemical disclosure. This effort was part of a larger modernization of the Tennessee regulations.
 - ▶ Mirrors Colorado regulations with necessary changes to accommodate TN law.
 - ▶ Compliance for operators familiar with CO requirements should be easy.
 - ▶ Expected to be effective by 1st Quarter 2013.
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Texas

- ▶ Chapter 91, Natural Resources Code Subchapter S
- ▶ Effective September 1, 2011
- ▶ Disclosure
 - Can use www.fracfocus.org as disclosure mechanism
- ▶ Confidentiality provisions are unique and limit challenges to certain persons

Texas – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
16 Tex. Admin. Code § 3.29	In force	No later than 15 days following the completion of hydraulic fracturing treatment on a well, the supplier or the service company must provide to the operator of the well the following information: (1) each additive used in the hydraulic fracturing fluid and the trade name, supplier, and a brief description of the intended use or function of each additive in the hydraulic fracturing treatment; (2) each chemical ingredient subject to OSHA requirements for Material Safety Data Sheets; (3) the actual or maximum concentration of each such chemical ingredient by mass; (4) all other chemical ingredients that were intentionally included in, and used for the purpose of creating, hydraulic fracturing treatment(s) for the well; and (5) the CAS number for each chemical ingredient, if possible. Supplier or service company must provide a written statement that the specific identify and/or CAS number or amount of any additive or chemical ingredient is claimed to be entitled to protection as trade secret information.	Within 30 days of completion or within 90 days after the date on which the drilling operation is completed, whichever is earlier.

Utah

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
Utah Admin. Code Rule 49-3-21, Well Completion and Filing of Well Logs	In force	Operator shall file a well completion report, which includes the amount and type of material used in fracturing.	Within 30 days of completion

West Virginia

- ▶ Title 35, Series 8
- ▶ Effective September 8, 2011
- ▶ Simple Reporting
 - Volume of water to be used and that was actually used
 - Additives to be used and that were actually used

West Virginia – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
<p>35 CSR 8 § 3.3e</p> <p>West Va. Code § 22-6A-7(e)(5)</p>	<p>In force</p> <p>In force</p>	<p>WVDEP emergency rules until in effect until legislative bill (below) implemented, requiring a water management plan listing the anticipated additives used, and upon completion, list of the additives actually used.</p> <p>If the drilling, fracturing or stimulating of a horizontal well requires the use of water obtained by withdrawals from waters of the state in amounts that exceed 210,000 gallons during any 30 day period, the operator must submit a water management plan and include a listing of the additives that may be used in water utilized for fracturing or stimulating the well. Upon well completion, a listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of a completion report.</p>	<p>Disclosure required both as part of the well work permit application and upon completion of the well.</p>

Wyoming

- ▶ Chapter 3, Section 45
 - ▶ Effective September 2010
 - ▶ Chemical Disclosure / Confidentiality
 - ▶ VOCs/BTEX prohibited in groundwater
 - ▶ VOCs/BTEX permissible in hydrocarbon bearing zones
 - ▶ Petroleum distillates authorized by Supervisor
 - ▶ Pressure reporting
- 

Wyoming – Specifics

Applicable Law	Implemented / Proposed	Disclosure Requirements	When Disclosure Required
WOGCC rules, Ch. 3, s. 8(c)(ix), Application for Permit to Drill or Deepen a Well	In force	Requires a permit application to contain a "Description of the anticipated completion and stimulation program, including the base stimulation fluid and its source, the main chemical additives and proposed concentrations to be mixed, identified by additive type." Additional update required when there is a "change in the well stimulation service company, a change in fluid type or chemistry, or a major change in the drilling/completion/recompletion plan." (Ch. 3, s.10)	Permit application or on a supplemental form.
WOGCC rules, Ch. 3, s. 45, Well Stimulation	In force	<p>Requires additional disclosure of stimulation prior to permit issuance. Specific requirements include: "(i) Stimulation fluid identified by additive type . . . (ii) The chemical compound name and Chemical Abstracts Service (CAS) number . . . (iii) The proposed rate or concentration for each additive." The Supervisor also "retains discretion to request . . . the formulary disclosure for the chemical compounds used in the well stimulation(s)." The exercise of this discretion will be dictated by the particular incident or accident in question.</p> <p>Requires certain disclosures after stimulation, including: "(i) actual total well stimulation treatment volume pumped; (ii) Detail as to each fluid stage pumped, including actual volume by fluid stage, proppant rate or concentration, actual chemical additive name, type, concentration or rate, and amounts."</p>	<p>Prior to stimulation.</p> <p>Upon completion of stimulation.</p>

Canadian Provinces

- ▶ Alberta, British Columbia, Saskatchewan, Manitoba, Ontario, Yukon and certain NW Territories lands all have disclosure requirements of some kind
 - ▶ Typically requires an application in advance
 - ▶ Typically requires a completion report w/n 30 days
 - ▶ Confidentiality is limited, treated in several cases as tight hole requests as limited in time
- 

Trends

- ▶ Chemical disclosure
 - ▶ Publicly available information – FracFocus.org is being utilized as the reporting mechanism
 - ▶ Trade secret protections available pursuant to regulation or state law
 - ▶ Application reporting less favored
 - ▶ Post-completion reporting provides information as to actual material usage
 - ▶ The Next Big Thing: WELL INTEGRITY
- 