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Dear Honorable John Shimkus:

My responses to follow-up questions from testimony I gave before the Subcommittee on Environment and the Economy at the February 15, 2013 hearing entitled "The Role of the States in Protecting the Environment Under Current Law" are attached. I apologize for the delay in providing these responses. I sincerely appreciate the opportunity to testify before the Committee on behalf of both the Groundwater Protection Council and the Colorado Oil and Gas Conservation Commission. Some of my responses reflect the dual nature of my representation before the Subcommittee.

Sincerely,

Matthew Lepore  
Director

The Honorable John Shimkus

1. **You all emphasize the importance of a risk-based approach to regulation and compliance enforcement. How important is local expertise to making the risk-based approach effective? In prioritizing which permittees need more attention, do you use metrics, personal knowledge of the neighborhood, both, or something else?**

Answer: The Colorado Oil and Gas Conservation Commission's ("COGC") risk-based approach includes assigning field inspectors to specific regions of the state. Inspectors live and work in their assigned regional areas and become more familiar with unique characteristics of the region to which they are assigned, including the geologic characteristics, waste management requirements, and the oil and gas operators working in the region. We also use a computer-based risk management tool that prioritizes inspections for certain operations, such as cementing the casing, and plugging and abandoning operations, or on site-specific characteristics, such as locations that have had recent violations or that have not been inspected recently. Location-specific data is available to inspectors in the field via laptop computers synchronized with our database. We believe basin-specific, localized knowledge coupled with a database driven risk-based approach greatly enhance the overall effectiveness and efficiency of our field inspection program.

2. **Do you know of any state that has hydraulic fracturing activities occurring in their state with zero regulations regarding those activities?**

Answer: While many states have hydraulic fracturing occurring without "direct" regulatory language identifying the practice, all producing states have regulations designed to protect groundwater during such a process. State well

construction requirements are designed to prevent contamination during all phases of the well development process, including hydraulic fracturing. The fact that many states do not have a section of their rules title “Hydraulic fracturing operations” does not mean they do not regulate the practice through other rules or requirements. Colorado, for example, has extensive well construction regulations, which require steel casing and cement to be completed below the deepest drinking water aquifer to protect the aquifer. Colorado also has a fracture fluid disclosure regulation. In addition, Colorado has many regulations related to spill prevention and reporting, as well as exploration and production waste management requirements, that are intended to minimize and mitigate surface releases of hydraulic fracturing and other fluids.

**3. Keeping up with the changing technology of hydraulic fracturing seems important. How can an individual state agency ensure that its staff expertise is current?**

Answer: The COGCC staff regularly conducts technological training for its engineering, inspection, and environmental departments. Industry service providers, oil and gas operators, industry and environmental consulting firms, continuing education programs at local universities, and other state and federal regulatory agencies have provided training to COGCC in the past. Our engineering department coordinates most of our training. We also conduct cross-departmental training internally.

**4. Your testimony talks about a state information exchange.**

**a. Could you please elaborate on what this is and why you think it is an important effort by the states?**

Answer: The State Oil and Gas Regulatory Exchange (SOGRE) will bring state policy and technical staff together on a routine and coordinated schedule to share the way they do business, review internal operations, and open up opportunities for extrapolating effective practices from one state to another. The SOGRE creates a dynamic forum where states can reach out and communicate with one another in an ongoing effort to keep current with rapidly changing technology, as well as to share the very best and innovative regulatory procedures from state to state.

The SOGRE will focus first on field operations. This critical area is where the states know best how to conduct oversight of exploration and production activities. It is in the field where state regulators interact daily with the public and the operating companies. The program's initial goals are identifying opportunities for new operating procedures, improving communication with the public and improving efficiency and effectiveness in regulatory oversight.

**Field Inspectors Education and Certification Program**

We have teamed with highly respected university educators and will develop technical training opportunities for oil and gas inspectors and others associated with oilfield operations. The goal of this program is to provide a formal certification process for experienced field inspectors who desire an in-depth understanding of

new and/or emerging technical practices, as well as for persons new to the field who need in-depth basic training.

### FracFocus 2.0

Many states have revised, or are in the process of revising, regulations in response to changing technology and public concerns. Subsequently, twelve states have led in adopting chemical disclosure requirements, using FracFocus, that require companies to disclose chemicals used in the hydraulic fracturing process. A new, more searchable version of FracFocus, designed with the public in mind, will be fully functional June 1, 2013 and will contain information on over 45,000 individual fracturing jobs.

### Underground Injection Wells (UIC): Peer Reviews

These UIC disposal well Peer Reviews will be conducted jointly by the states and USEPA, in the respective program offices. They will help states and the USEPA continuously improve their programs to protect the environment through the UIC program. UIC wells can safely dispose of a variety of fluids, including produced water which can include water returned from the hydraulic fracturing of wells. Conducting peer-to-peer reviews of this critical environmental protection program will help ensure an extra level of environmental oversight for the public.

### Science and Technology Transfer

This effort will focus on the emerging technology from pure and applied research projects being done through the US Department of Energy, National Labs, Universities, and other institutions. Opportunities will be provided for researchers

to communicate with states on how the application of their work might improve environmental protection and regulatory oversight.

**b. Is this a new initiative?**

Answer: Information sharing among states is not new, but the current State Oil and Gas Regulatory Exchange (SOGRE) is a revitalized effort to formalize the information exchange.

**c. How does it help states evaluate their injection well programs?**

Answer: See above.

**d. Who is involved in the process?**

Answer: See above.

**e. What is the significance of this program compared to other audit programs?**

Answer: Audit programs tend to be prescriptive and frequently do not address new technologies and developing trends. Oil and gas drilling and development are constantly evolving, and new processes and procedures are deployed continuously. An information exchange like SOGRE can be flexible and adaptive, to help regulators keep up with emerging technologies and related regulatory challenges.

**f. Is this similar to the new Underground Injection Control Peer Review Program?**

Answer: The UIC Peer Review Program is one part of the SOGRE.

**5. Question. Some are concerned about first responders being able to know what chemicals fracturing workers have been exposed to in case of an emergency.**

**a. Does FracFocus address this concern?**

Answer: To the extent this question specifically asks about chemicals “fracturing workers have been exposed to in case of an emergency” FracFocus may not address the concern due to the lag in time between conducting a fracturing job and reporting the fracture fluid chemicals to FracFocus. First responders would have access to Material Safety Data Sheets (“MSDS”) for chemicals on-site as required under federal Occupational Safety and Health Administration regulations. FracFocus was not intended or designed to replace MSDS requirements.

**b. Do some states provide a way for first responders to get information that includes confidential business information?**

Answer: In Colorado under COGCC Rules the specific identity and amount of any fracturing chemicals used, including those claimed to be trade-secrets or confidential business information, must be disclosed immediately in a medical emergency upon verbal request by a health professional, which includes emergency medical technicians, if the information is necessary for emergency treatment.

**6. Question: How do you make sure a site in your state is geologically suitable for hydraulic fracturing?**

Answer: Oil and gas exploration, development and production have been taking place in Colorado for more than 100 years, in many different and diverse basins across the state. Hydraulic fracturing has been taking place for at least 50

years in Colorado. Between the COGCC and the Colorado Geological Survey, we have vast repositories of information about the state's geology. For example, the COGCC has well log data showing the lithology of the bore holes, for thousands of wells. In addition, we have a well-developed understanding of the location and depths of major aquifers in the state. In most parts of the state, target formations for oil and gas operations are separated from drinking water aquifers by several thousand feet. Finally, our engineering staff reviews each proposed oil and gas location and permit to drill with respect to known particular geologic characteristics of the region to determine whether any special conditions should be imposed on drilling or fracturing operations at the location.

- 7. Question: Is it clear that hydraulic fracturing occurs in diverse areas, with diverse geography and geology? Do you believe a federal, one size fits all standard is craft-able or useful?**

Answer: Colorado has several diverse oil and gas producing basins, including coal bed methane, conventional reservoirs, and unconventional shale formations. The geography and geology varies dramatically in of these basins. We do not believe one-size-fits-all federal standard governing hydraulic fracturing is craft-able or necessary.

- 8. Question: What type of data quality assurance does FracFocus employee? How can the public be assured of the accuracy, completeness, and timeliness of the information on the FracFocus website?**

Answer: COGCC has monitored the timeliness of reporting, and failures to report, since shortly after chemical disclosures became required under our Rules. FracFocus supplies a monthly report that identifies the well, the stimulation date,



and the date the required report was submitted. COGCC uses this information to check reporting compliance. The upgrade to FracFocus Version 2 will enhance quality control features such as spelling, chemical name and CAS number alignment, and calculation of the total volume of fluids and chemicals reported.

The Honorable Robert E. Latta

- 1. Can you discuss some of the positive economic impacts that the industry is having on your area?**

Answer: In 2010, the oil and gas industry in Colorado directly employed over 40,000 people and supported over 107,000 jobs in the state. The industry provided \$6.5 billion in total labor income and \$31 billion in economic output annually. The total assessed values for taxable Oil and Gas property in 2010 was \$6.25 billion or 5.63% of the state total. At \$72,373, average wages in 2010 were 51% higher for workers in the oil and gas industry compared to all industries in the state. Additionally, in 2008 while the state has been gripped by recession, the industry was one of a few that experienced upward employment cost pressures, with average wages increasing over 2009.

- a. What role do you see further advances in technology having on the continued success of this industry?**

Answer: Technological improvements hold the promise to continue minimizing or eliminating environmental impacts associated with hydraulic fracturing, which will lead to greater public acceptance and removal of certain barriers to operations. Recent advances in development of more environmentally friendly fracture fluids is one example. A cottage industry is emerging around

reclaiming and reusing flowback fluid and produced water, which means lower demands for fresh water and, again, greater public acceptance of the process.

Advances in vapor recovery and reduce air emissions are on the horizon. Continued technological advances in drilling technology likely will lead to greater success with longer wellbore lateral lengths in some shale formations, resulting in lower surface impacts. All of these advances will contribute to the continued success of the industry.

**2. Can you discuss some measures your state has taken to ensure hydraulic fracturing is done in an environmentally safe manner?**

Answer: In December 2011 Colorado adopted what was then considered the nation's most comprehensive and progressive hydraulic fracture fluid chemical disclosure rule. Colorado's disclosure rule set the standard for the rest of the country, and has since been emulated by multiple states and the Federal Bureau of Land Management. In 2013, Colorado adopted new rules governing groundwater monitoring around new oil and gas wells, and became the first state in the nation to require post-drilling water samples to be taken near newly completed wells. In addition, Colorado adopted a series of new rules governing best management practices for oil and gas operations, information to be provided to nearby residents and local governments prior to conducting drilling operations, and required minimum distances between oil and gas locations and residences and other occupied buildings. Like Ohio, Colorado is proud of its regulatory regime, which we believe to be one of the most progressive, yet balanced, in the nation.

The Honorable Paul Tonko

**1.a. How are these cumulative impacts of oil and gas production handled within your state's regulatory program?**

Answer: Colorado has experienced solid, but not exponential, growth in oil and gas drilling in recent years. Depressed natural gas prices have resulting in a decrease in drilling activity in Colorado's gas producing basins.

The majority of recent drilling and associated hydraulic fracturing activity is taking place in the Wattenberg Field in north-central Colorado. This Field has been a prolific producer for more than 30 years. With respect to regulating potential cumulative impacts of increased drilling and stimulation, COGCC regulates environmental impacts including wildlife habitat (1200-series rules), well site reclamation (1000-series rules) and stormwater management requirements. All of these Rules mitigate potential cumulative effects of oil and gas operations.

In addition, the COGCC recently provided funding to study air emissions associated with drilling and completion in the Wattenberg field. The study will examine emissions and dispersion of air contaminants from specific drilling and completion activities. In addition, the Colorado Department of Public Health and Environment has begun a rule making process intended to strengthen emission requirements for oil and gas operations in the state. In the current legislative session, the COGCC is supporting a bill that would facilitate recovery of gas vapors from condensate tanks and allow the recovered gas to be sold. Other proposed legislation supported by COGCC would expedite issuance of required air permits if the operator agrees to enhance emission controls.

**1.b. What provisions does your state have (e.g. taxes, fees) to ensure that the costs of impacts to public resources and for additional infrastructure to support oil and gas production are covered by the oil and gas industry?**

Answer: In Colorado, oil and gas producers may local property taxes, which county governments can use to build, repair or maintain roads and other infrastructure. Operators also pay a severance tax, a portion of which is returned to local governments.

**2.a. Does your state consider the market price of gas in your permitting process – permitting fewer wells when the price is lower and increasing them when the price improves to ensure the state maximizes its return from hosting the expanding gas production?**

Answer: The market price for gas is not a consideration in Colorado's permitting process.

The Honorable Henry A. Waxman

**1. What, if any, requirements does your Department impose through regulations to ensure that drilling mud and associated wastes from the exploration and production of oil and gas are properly disposed?**

Answer: The COGCC has an entire series of regulations to address Exploration and Production Waste Management, including treatment, storage and disposal requirements, as well as spill reporting and remediation requirements.

The preface to this series of regulations states:

The rules and regulations of this series establish the permitting, construction, operating and closure requirements for pits, methods of E&P waste management, procedures for spill/release response and reporting, and sampling and analysis for remediation activities. These regulations are in 2-CCR 404-1, 900 series.

2. **What, if any, authority or ability does your Department have to address the interstate movement of drilling mud and other associated wastes and to track such wastes entering or leaving the state?**

Answer: COGCC Rule 907.b., Waste Transportation, addresses interstate transport of exploration and production waste as follows:

**907.b. Waste transportation.**

(1) E&P waste, when transported off-site within Colorado for treatment or disposal, shall be transported to facilities authorized by the Director or waste disposal facilities approved to receive E&P waste by the Colorado Department of Public Health and Environment. **When transported to facilities outside of Colorado for treatment or disposal, E&P waste shall be transported to facilities authorized and permitted by the appropriate regulatory agency in the receiving state.** (emphasis supplied).

(2) **Waste generator requirements.** Generators of E&P waste that is transported off-site shall maintain, for not less than five (5) years, copies of each invoice, bill, or ticket and such other records as necessary to document the following requirements A through F:

- A. The date of the transport;
- B. The identity of the waste generator;
- C. The identity of the waste transporter;
- D. The location of the waste pickup site;
- E. The type and volume of waste; and
- F. The name and location of the treatment or disposal site.

Such records shall be signed by the transporter, made available for inspection by the Director during normal business hours, and copies thereof shall be furnished to the Director upon request.

3. **How many investigators are employed by your Department to identify and investigate illegal dumping of these wastes within the state, and ameliorate the potential risks posed by any such dumping?**

Answer: COGCC currently has a primary field operations staff that includes both field inspectors and environmental protection specialist who inspect oil and gas locations, and respond to spills and releases of exploration and production wastes.

There are 17 inspectors and 12 environmental protection specialists. The General

Assembly has proposed increasing the COGCC staff by 19 full-time employees this fiscal year. A majority of those new FTE would be inspectors and environmental protection specialists.

The Honorable Henry A. Waxman and The Honorable Diana DeGette

- 1. Question: Does the IOGCC provide technical assistance to reporting companies who have questions about how to complete the FracFocus form or what to disclose on the form?**

Answer: Technical assistance to companies is provided by the Ground Water Protection Council (GWPC) and the GWPC contractor. With respect to what to disclose on the form most of these questions are referred to the individual states because each state may have a different disclosure requirement and it would not be proper for FracFocus to provide regulatory guidance to users regarding individual state laws and regulations.

- 2. Question: Does the IOGCC offer or provide trainings to reporting companies on how to submit data to FracFocus, besides the webinar available on the FracFocus website: If so, please explain.**

Answer: The GWPC has held numerous webinars and live training events for companies, states, and state oil and gas associations. These sessions have been designed to provide users with the training needed to access, and utilize the FracFocus system to submit disclosures. To date the GWPC has held at least seven live training events in Texas, Colorado, and Oklahoma. Additional events are scheduled for Pennsylvania.

3. **Question:** Does the GWPC consider itself to be a “public agency” and therefore subject to the disclosure requirements of the federal Freedom of Information Act (FOIA)? Does the GWPC consider itself subject to the disclosure requirements of the Oklahoma Open Records Act? Please explain why or why not.

Answer: The GWPC is a private corporation and does not consider itself to be subject to the disclosure requirements of FOIA or similar state open records laws. However, GWPC does endeavor to provide non-privileged information to the public in response to a request for information.

4. **Question:** Colorado’s regulations state that if the chemical disclosure registry (FracFocus) (a) does not allow the Commission staff and the public to search and sort the registry for Colorado information by geographic area ingredient, chemical abstract service number, time period, and operator” and (b) there is “no reasonable assurance that the registry will allow for such searches by a date certain acceptable to the Commission,” then operators disclosing to FracFocus also must submit the disclosure forms to the Commission for appropriate disclosure.

- a. **What is FracFocus doing to ensure that FracFocus meets the “search and sort” requirements of Colorado’s regulations?**

a. Answer: FracFocus has already met the search and sort requirements of the Colorado regulations. The current search forms available on FracFocus allow for the searches provided for in the Colorado regulations.

- b. **Has IOGCC or FracFocus staff met with the Colorado Oil and Gas Commission to discuss this “search and sort” requirement? Please explain.**

b. Answer: The GWPC has met with representatives of the COGCC and discussed the search and sort requirements. Based on these discussions a date certain for the availability of these elements was defined and has been met.

5. **Questions: A number of states direct companies to disclose directly to FracFocus or provide companies with the option of disclosing to FracFocus.**

a. **For those states that require companies to disclose directly to FracFocus, such as North Dakota and Utah, does FracFocus provide the state agencies with the chemical disclosure forms once received? If no, please explain.**

a. Answer: The FracFocus system makes the disclosure forms available to everyone, including state agencies.

b. **For those state that provide companies with the option of disclosing to FracFocus, such as Montana, does FracFocus provide the state agencies with the chemical disclosure forms once received? If no, please explain.**

b. Answer: The FracFocus system makes the disclosure forms available to everyone, including state agencies.

c. **Does FracFocus notify the relevant state agency when a company has submitted a disclosure form for a well?**

c. Answer: The system provides periodic reports of disclosures reported to FracFocus to the states. This includes all disclosures reported but is not done on a well by well basis at the request of the states.

d. **Does FracFocus tailor its disclosure form template for each state? If no, please explain why. If yes, please describe how FracFocus tailors the form?**

d. Answer: The FracFocus template is designed to be flexible enough to meet the needs of all states. There is no need to tailor the form differently for each state as it can capture a wide range of information based on individual state requirements.



- e. **Some states require operators to disclose to FracFocus all chemical components in a fracturing fluid, not just chemicals subject to 29 CFR 1910.1200(i) and Appendix D. How has FracFocus modified its template disclosure form to facilitate operator compliance with requirements to disclose chemicals that do not appear on Material Safety Data Sheets?**

e. Answer: The FracFocus template has always been capable of capturing MSDS and Non-MSDS chemicals. However, in the new xml schema of FracFocus 2.0 these chemicals are divided in the data entry form to make it easier for the data entry operator to split them. They are also split on the final disclosure pdf.

- f. **Some states require a well operator or service company to report the type of base fluid used in a fracturing job if it does not use water. In Texas, for example, the regulations state than an operator has to disclose “the total volume of water used in the hydraulic fracturing treatment(s) of the well or the type and total volume of the base fluid used in the hydraulic fracturing treatment(s), if something other than water.” How has FracFocus modified its template disclosure form to facilitate operator compliance with requirements to disclose the type and volume of any non-water based fluid used?**

f. Answer: The FracFocus 2. System (now in use) includes fields for non-water base material types and volumes.

- g. **If a state requires an operator to disclose an aspect of the fracturing fluid or process that is not on the FracFocus disclosure form, such as the length of the fracture, how does the operator include that required information on the disclosure form?**

g. Answer: FracFocus is a chemical disclosure system. Aspects of hydraulic fracturing such as fracture length, zones fractured, depths of fracturing, pressures used etc., that are required to be reported to the state must still be reported on each

state's well completion forms. FracFocus was never intended to capture "all" aspects of a hydraulic fracturing job.

**6. Question: Does the FracFocus disclosure form allow an operator to enter Chemical Abstract Service (CAS) numbers that do not exist or are inaccurate?**

Answer, Yes. While the system will warn the user that a CAS number does not appear to be in the standard format, it does not prevent the user from entering an inaccurate or non-existent CAS number. NOTE: Operators cannot change the CAS number reported to them by their service-company or chemical provider. To do otherwise might result in the reporting of an incorrect chemical, and could expose the company to legal ramifications. Therefore, if an erroneous number is reported to the operator by the service company or chemical provider, the operator is obligated to report it in the exact manner it is reported to them without alteration.

**7. Question: What is IOGCC or FracFocus doing to improve the (accuracy) and (b) completeness of the data it receives from operators?**

Answer: The current FracFocus 2.0 system utilizes a number of data validation algorithms to evaluate the entries made in fields and to notify the user of errors and warnings for inaccurate or incomplete information. These include such items as dates; coordinate locations, volumes, state and county auto-fills from API field and other checks.

**8. Question: What does IOGCC or FracFocus do to substantiate an operator's claim that a chemical component constitutes a trade secret or confidential business information?**

Answer: Because each state has different laws concerning what is acceptable as a trade secret or confidential business information, and such laws are subject to change or modification, it would not be technically feasible for FracFocus to evaluate the validity of such claims. Further it would not be appropriate for FracFocus to make a judgment call as to what is and is not confidential under individual state laws. This authority rests with the state, not with FracFocus. Consequently, FracFocus simply reports the claim and leaves the determination of whether or not a claim of confidentiality is appropriate or valid to the regulatory authority.

**9. Question: The FracFocus "terms of use" states the following (see <http://fracfoucs.org/terms-of-use>): "You are only permitted to use the content as expressly authorized by us or the specific content provider. Except for a single copy made for personal use only, you may not copy, reproduce, modify, republish, upload, post, transmit, or distribute any documents or information from this site in any form or by any means without prior written permission from us or the specific content provider, and you are solely responsible for obtaining permission before reusing any copyrighted material that is available on this site. Any unauthorized use of the materials appearing on this site may violate copyright, trademark, and other applicable laws and could result in criminal or civil penalties."**

**a. If EPA downloaded and analyzed chemical disclosure data posted on FracFocus, without obtaining permission from GWPC, IOGCC, or FracFocus, is it your position that EPA would be violating the "terms of use"?**

a. Answer: With respect to the contents of the "informational" section of the site and the data provided on a strictly voluntary basis the answer is technically

yes. However, with respect to the data provided for those states that require or allow the use of FracFocus as the means of regulatory reporting, all data is considered public data and for this information the answer would be no.

Regardless, it is the policy of FracFocus to allow for downloads of all disclosures, whether voluntary or required. The only restriction we place on such downloads is that they must not be conducted by automated programs (Commonly referred to as bots) because these programs can cause system resource issues which could affect access to the system by other users. (NOTE: To this effect we have facilitated the download of disclosure data for the USEPA).

**b. If a state agency downloaded and analyzed chemical disclosure data posted on FracFocus, without obtaining permission from GWPC, IOGCC, or FracFocus, is it your position that the state agency would be violating the “terms of use”?**

b. Answer: The response to this question is the same as that provided for item a. above with the exception to a state accessing the disclosures from that state; which would not be a technical violation of the “terms of use” regardless of whether or not the state used the FracFocus system for its regulatory reporting.

**c. If a non-profit organization downloaded and analyzed chemical disclosure data posted on FracFocus, without obtaining permission from GWPC, IOGCC, or FracFocus, is it your position that the non-profit organization would be violating the “terms of use”?**

c. Answer: The response to this question is the same as that provided for item a. above.