UNCONVENTIONAL OIL AND GAS DEVELOPMENT

BIBLIOGRAPHY

May 2017 Monthly Update

“NEW” indicates entries that have been added since the previous update

This bibliography includes:

- Literature compiled by the Health Effects Institute Special Scientific Committee on Unconventional Oil and Gas Development as it developed its October 2015 *Research Agenda on the Potential Impacts of 21st Century Oil and Natural Gas Development in the Appalachian Basin and Beyond*. Given its specific charge, the Committee focused its literature review on information related to potential impacts of 21st century oil and natural gas development rather than the enormous literature about the technology that underlies it. In the Research Agenda and here, “21st century oil and natural gas development” refers to the onshore development and production of oil and natural gas from unconventional geologic resources as practiced today, recognizing that industry practices continue to change in response to evolving technologies, regulations, and other factors. The Committee gave priority to peer-reviewed articles from the scientific literature as well as to reports and data from nongovernmental research institutions and government agencies with knowledge of and expertise about oil and natural gas development and production in the Appalachian region. Despite this focus on the Appalachian region, much of this bibliography is relevant to other regions in the United States and around the world.

- Literature published since the Special Committee’s review that is primarily focused on potential human exposures and effects.

~ We welcome your suggestions of papers that should be included.
   Please send to dvorhees@healtheffects.org ~
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STRESSOR AND EXPOSURE CHARACTERIZATION

STRESSOR IDENTIFICATION AND PROPERTIES

Drilling Fluid Composition


Hydraulic Fracturing Fluid Composition


**Wastewater Composition**


Solid Waste Composition


Naturally Occurring Radioactive Material (NORM)


Air Quality Emission Inventories


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Reviews and General Resources


STRESSOR FATE AND TRANSPORT

Forensics/Tracers


Subsurface Migration


Lefebvre R, Gleeson T, McKenzie JM, Gassiat C. 2015. Reply to comment by Flewelling and Sharma on


Hydraulic Fracturing Depth and Fracture Propagation (as it relates to Ground Water Quality)


**AIR QUALITY**

**Methane**


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fugitive methane emissions from oil and gas production in North American tight geologic formations. Earth's Future 2:548–558.


**Monitoring Data and/or Modeling**

**Appalachia**


West Virginia Department of Environmental Protection Office of Oil and Gas. 2013. Air Quality Impacts Occurring from Horizontal Well Drilling and Related Activities. Charleston, WV: West Virginia DEP.

West Virginia Department of Environmental Protection Office of Oil and Gas. 2013. Noise, Light, Dust, and Volatile Organic Compounds Generated by the Drilling of Horizontal Wells Related to the Well Location Restriction Regarding Occupied Dwelling Structures. West Virginia Department of Environmental Protection-Office of Oil and Gas. Charleston, WV.

**Colorado/Southwest**


Collett JL, Ham J. 2013. North Front Range Oil and Gas Air Pollutant Emission and Dispersion Study: A Proposal. Colorado State University,


North Dakota


Texas


Rich AL, Orimoloye HT. 2016. Elevated atmospheric levels of benzene and benzene-related compounds from unconventional shale extraction and processing: human health concern for residential communities. Environ Health Insights 10:75–82.


Utah and Wyoming


U.S. Multi-Regional or National Scale


Reviews and General Resources


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**WATER QUALITY AND USE**

**Surface Water Quality Baseline Measurements**


Surface Water Quality Monitoring and/or Modeling


**Drinking Water Quality (sourced from groundwater or surface water)**


**Arkansas**


**Appalachia**


**Colorado**


**Texas**


Wyoming


Ground Water Quality Baseline Measurements


Ground Water Quality Modeling and/or Monitoring

Appalachia


Canada


Colorado and Wyoming


Montana


Texas


Water Use


Wilkins RF, Menefee AH, Clarens AF. 2016. Environmental life cycle analysis of water and CO2-based fracturing fluids used in unconventional gas production. Environmental science & technology.


Reviews and General Resources


### SOIL QUALITY

### SEDIMENT QUALITY


### FOOD QUALITY

### CHEMICAL STRESSOR TOXICITY

**Drilling Fluids**


**Hydraulic Fracturing Fluids**


**Wastewater**


Blewett TA, Delompre PL, He Y, Folkerts EJ, Flynn SL, Alessi DS, Goss GG. 2017. The sub-lethal and
reproductive effects of acute and chronic exposure to flowback and produced water from hydraulic fracturing on the water flea Daphnia magna. Environmental science & technology.


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**Solid Wastes**

**HUMAN EXPOSURE**

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1 Also see the air quality sections, which include numerous studies that are relevant to human exposure.
Personal Exposure Monitoring


On-site and Fenceline Air Quality Monitoring


Rich AL, Orimoloye HT. 2016. Elevated atmospheric levels of benzene and benzene-related compounds from unconventional shale extraction and processing: human health concern for residential communities. Environ Health Insights 10:75–82.


West Virginia Department of Environmental Protection Office of Oil and Gas. 2013. Air Quality Impacts Occurring from Horizontal Well Drilling and Related Activities. Charleston, WV: West Virginia DEP.


**Indoor Air Quality Monitoring**


**Surface Water Quality Monitoring**


Drinking Water Monitoring


**Groundwater Monitoring**


### Soil and Sediment Monitoring


### Biomonitoring

Crowe E, Patton S, Thomas D, Thorpe B. 2016. When the Wind Blows: Tracking Toxic Chemicals in Gas Fields

Exposure Pathway Reviews


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HEALTH AND WELL-BEING

Ecological Health
Public Health
Oil and Gas Worker Health
Individual and Community Well-Being
ECOLOGICAL HEALTH


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Kreipl MP, Kreipl AT. 2017. Hydraulic fracturing fluids and their environmental impact: then, today, and tomorrow. Environmental Earth Sciences 76. NEW


New York State Department of Environmental Conservation. 2013. Generic Environmental Impact Statement on the


Shank MK. 2013. The Pennsylvania State University.


**PUBLIC HEALTH**

**Human Health Risk Assessment and Public Health Evaluation**


Ziemkiewicz P, Quaranta J, Darnell A, Wise R. 2014. Exposure pathways related to shale gas development and


Public Safety


Epidemiology


Gulland A. 2016. Fracking is linked to asthma increase, study finds. Bmj-British Medical Journal 354.


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MI: University of Michigan.


**Health and Stress**


**Community-Engaged Research (Perception, Symptoms, and Other Anecdotal Information)**


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General Resources and Guidance


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Eaton E, Kinchy A. 2016. Quiet voices in the fracking debate: Ambivalence, nonmobilization, and individual action


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The Extractive Industries and Society 1:130–136.

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analysis of health impacts and stressors perceived to result from unconventional shale gas development in the

Filteau MR. 2015. A localized masculine crisis: local men's subordination within the Marcellus shale region's

Finkel ML. 2015. The Human and Environmental Impact of Fracking: How Fracturing Shale for Gas Affects Us and
Our World. ABC-CLIO.

Finkel ML, Selegean J, Hays J, Kondamudi N. 2013. Marcellus shale drilling's impact on the dairy industry in


MOST EFFECTIVE PRACTICES

Waste Management
Induced Seismicity
Wellbore Integrity and Diagnostics
WASTE MANAGEMENT

General Information


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**Treatment and Reuse**


**INDUCED SEISMICITY**


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WELLBORE INTEGRITY AND DIAGNOSTICS

(LAST UPDATED OCTOBER 2015)

Modeling


Well Material Performance under Simulated Conditions


Integrity Monitoring and Analysis of Barrier Failure Data


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**General Resources and Guidance – Wellbore Integrity and Diagnostics**


ADDITIONAL INFORMATION

Multi-Discipline Reviews and Research
Recommendations
Economics
Regulation
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ECONOMICS


REGULATION


Agency SABUEP. 2016. SAB Review of the EPA’s draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. 1-180.


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**BACKGROUND MATERIAL**

Fact Sheets and General Information


**Technology**


Pekney N. 2016. Mastering the Subsurface Through Technology, Innovation and Collaboration: Carbon Storage and Oil and Natural Gas Technologies Review Meeting. NEW


Oil and Gas Resource Assessments


Levine JS, Fukai I, Soeder DJ, Bromhal G, Dilmore RM, Guthrie GD, Rodosta T, Sanguinito S, Frailey S, G orecki


Geology/Hydrogeology


**Energy Outlooks**


Guidance Documents


Data Availability, Transparency, and Community Engagement


