

References Section Excerpt (30 pages)
from the Council of Canadian Academies' May 1, 2014 Report,

*Environmental Impacts of Shale Gas Extraction in Canada,
The Expert Panel on Harnessing Science and Technology to Understand the
Environmental Impacts of Shale Gas Extraction,*

with Highlighted Text of the 47 Peer-Reviewed Citations which are
Registered in the Physicians, Scientists & Engineers' On-line
[Healthy Energy Citation Database on Shale Gas & Tight Oil Developments](#)

References

- (S&T)² Consultants Inc. (2004). GHGenius. Model History. Retrieved April 2013, from <http://www.ghgenius.ca/about.php#GHGenius%20Impact%20Assessment>.
- (S&T)² Consultants Inc. (2012). *GHGenius Natural Gas Pathway Update*. Delta (BC): Natural Resources Canada.
- ACOLA (Australian Council of Learned Academies). (2013). *Engineering Energy: Unconventional Gas Production*. Melbourne, Australia: ACOLA.
- ACPH (The Federal, Provincial and Territorial Advisory Committee on Population Health). (1994). *Strategies for Population Health. Investing in the Health of Canadians*. Halifax (NS): Health Canada.
- ACPH (The Federal, Provincial and Territorial Advisory Committee on Population Health). (1999). *Toward a Healthy Future. Second Report on the Health of Canadians*. Charlottetown (PE): Health Canada.
- Adams, C. (2012). *Summary of Shale Gas Activity in Northeast British Columbia 2011*. Victoria (BC): B.C. Ministry of Energy and Mines.
- Adams, M. B. (2011). Land application of hydrofracturing fluids damage a deciduous forest stand in West Virginia. *Journal of Environmental Quality*, 40, 1340-1344. doi: 10.2134/jeq2010.0504.
- AEMP (Alberta Environmental Monitoring Panel). (2011). *A World Class Environmental Monitoring, Evaluation and Reporting System for Alberta*. Edmonton (AB): AEMP.
- AER (Alberta Energy Regulator). (2010). *Directive 020: Well Abandonment*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2011a). *Unconventional Gas Regulatory Framework—Jurisdictional Review*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2011b). *Directive 055 — Addendum: Interim Requirements for Aboveground Synthetically-Lined Wall Storage Systems, Updates to Liner Requirements, and Optional Drinking Requirements for Single-Walled Aboveground Storage Tanks*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2011c). *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2011d). *ST57-2011 Field Surveillance and Operations Branch Provincial Summary 2010*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2012a). *Caltex Energy Inc. Hydraulic Fracturing Incident 16-27-068-10W6M September 22, 2011*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2012b). *Directive 065: Resources Applications for Oil and Gas Reservoirs*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2012c). *Directive 059: Well Drilling and Completion Data Filing Requirements*. Calgary (AB): AER.

- AER (Alberta Energy Regulator). (2012d). *Midway Energy Ltd. Hydraulic Fracturing Incident: Interwellbore Communication January 13, 2012*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2012e). *Regulating Unconventional Oil and Gas in Alberta*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2012f). *Bulletin 2012-25. Amendments to Directive 059: Well Drilling and Completion Data Filing Requirements in Support of Disclosure of Hydraulic Fracturing Fluid Information*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2013a). *Directive 008: Surface Casing Depth Requirements*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2013b). *Directive 083: Hydraulic Fracturing – Subsurface Integrity*. Calgary (AB): AER.
- AER (Alberta Energy Regulator). (2013c). *Hydraulic Fracturing 201*. Hydraulic Fracturing in Alberta. Paper presented by Cal Hill, Strategy and Regulation Division, AER, Calgary (AB).
- AESRD (Alberta Environment and Sustainable Resource Development). (2011). *Methane Gas in Groundwater*. Retrieved February 2013, from <http://environment.alberta.ca/02883.html>.
- AESRD (Alberta Environment and Sustainable Resource Development). (2012). *A Guide to Remediation Certificates for Upstream Oil and Gas Sites*. Edmonton (AB): AESRD.
- AESRD (Alberta Environment and Sustainable Resource Development). (2013). *Oil and Gas Wells Reclamation*. Retrieved October 2013, from <http://environment.alberta.ca/02862.html>.
- Al, T., Butler, K., Cunjak, R., & MacQuarrie, K. (2012). *Opinion: Potential Impact of Shale Gas Exploitation on Water Resources*. Fredericton (NB): University of New Brunswick.
- Alberta Energy and Utilities Board. (2003). *Interim Directive ID 2003-01*. Calgary (AB): Alberta Energy and Utilities Board.
- Alberta Geological Survey. (2012). *Saline Aquifer Mapping*. Retrieved January 2014, from <http://www.ags.gov.ab.ca/groundwater/saline-aquifer-mapping.html>.
- Alberta Ministry of Energy. (2013). *Energy Annual Report 2012–2013*. Edmonton (AB): Government of Alberta.
- ALL Consulting. (2012). *The Modern Practices of Hydraulic Fracturing: A Focus on Canadian Resources*. Tulsa (OK): Petroleum Technology Alliance Canada and Science and Community Environmental Knowledge Fund.
- Allen, D. T., Torres, V. M., Thomas, J., Sullivan, D. W., Harrison, M., Hendler, A., . . . Seinfeld, J. H. (2013). *Measurements of methane emissions at natural gas production sites in the United States*. *Proceeding of the National Academy of Sciences*, 44 (4). doi: 10.1073/pnas.1304880110

- Allen, M. R., Frame, D. J., Huntingford, C., Jones, C. D., Lowe, J. A., Meinshausen, M., & Meinshausen, N. (2009). Warming caused by cumulative carbon emissions towards the trillionth tonne. *Nature*, 458(7242), 1163-1166. doi: 10.1038/nature08019.
- Aller, L., Bennett, T., Lehr, J. H., Petty, R. J., & Hackett, G. (1987). *DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeologic Settings*. Dublin (OH): U.S. EPA.
- Alvarez, R. A., Pacala, S. W., Winebrake, J. J., Chameides, W. L., & Hamburg, S. P. (2012). Greater focus needed on methane leakage from natural gas infrastructure. *Proceedings of the National Academy of Sciences of the United States of America*, 109(17), 6435-6440. doi: 10.1073/pnas.1202407109.
- Amos, R. T. & Blowes, D. W. (2008). Versatile direct push profiler for the investigation of volatile compounds near the water table. *Water Resources Research*, 44(4). doi: 10.1029/2008WR006936.
- ANGA (America's Natural Gas Alliance) & AXPC (American Exploration and Production Council). (2012). *ANGA Comments to EPA on New Source Performance Standards for Hazardous Air Pollutants Review America's Natural Gas Alliance*. Washington (DC): ANGA and AXPC.
- APHA (American Public Health Association). (2012). *Policy Statement on the Environmental and Occupational Health Impacts of High-Volume Hydraulic Fracturing of Unconventional Gas Reserves*. Washington (DC): APHA.
- API (American Petroleum Institute). (2009). *Hydraulic Fracturing Operation – Well Construction and Integrity Guidelines*. Washington (DC): API.
- ARI (Advanced Resources International, Inc.). (2013). *EIA/ARI World Shale Gas and Shale Oil Resource Assessment. Technically Recoverable Shale Gas and Shale Oil Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States*. Arlington(VA): ARI.
- Arthur, J.D., Bohm, B., Coughlin, B.J., & Layne, M. (2008). *Evaluating the Environmental Implications of Hydraulic Fracturing in Shale Gas Reservoirs*. Tulsa (OK): ALL Consulting.
- Arthur, J. D., Coughlin, B. J., Bohm, B. K., & ALL Consulting. (2010). *Summary of Environmental Issues, Mitigation Strategies, and Regulatory Challenges Associated with Shale Gas Development in the United States and Applicability to Development and Operations in Canada*. Paper presented at Canadian Unconventional Resources and International Petroleum Conference, Calgary (AB).
- AWWA (American Water Works Association). (2013). *Water and Hydraulic Fracturing*. Denver (CO): AWWA.
- B.C. Ministry of Energy and Mines & NEB (National Energy Board). (2011). *Ultimate Potential for Unconventional Natural Gas in Northeastern British Columbia's Horn River Basin*. Victoria (BC): B.C. Ministry of Energy and Mines and NEB.

- B.C. Ministry of Energy, Mines and Petroleum Resources. (2008). Montney Activity/Production NE British Columbia. Retrieved August 2013, from www.empr.gov.bc.ca/OG/oilandgas/petroleumgeology/UnconventionalOilAndGas/Pages/Shale.aspx.
- B.C. Ministry of Energy, Mines and Petroleum Resources. (2010). Province Takes Action to Manage Boreal Caribou. Retrieved February 2013, from http://www2.news.gov.bc.ca/news_releases_2009-2013/2010EMPR0027-000734.htm.
- B.C. Oil and Gas Commission. (2009). *Information Letter # OGC 09-07. Storage of Fluid Returns from Hydraulic Fracturing Operations*. Fort St. John (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2010a). *Safety Advisory 2010-03 Communication During Fracture Stimulation*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2010b). *Oil and Gas Water Use in British Columbia*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2010c). *Commission Order 10-15-001*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2011). *Land Use Planning*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2012a). *Investigation of Observed Seismicity in the Horn River Basin*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2012b). *Fracture Fluid Report Upload Manual*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2012c). *Water Use in Oil and Gas Activities*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2013a). *2013 Restoration Verification Audit Program Procedure Manual*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2013b). *Well Completion, Maintenance and Abandonment Guidelines*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2013c). *Application Guideline for: Deep Well Disposal of Produced Water Deep Well Disposal of Nonhazardous Waste*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2013d). *Water Source, Injection and Disposal Service Wells*. Victoria (BC): B.C. Oil and Gas Commission.
- B.C. Oil and Gas Commission. (2013e). *Flaring and Venting Reduction Guideline*. Victoria (BC): B.C. Oil and Gas Commission.
- Bair, E. S., Freeman, D. C., & Senko, J. M. (2010). *Expert Panel Technical Report. Subsurface Gas Innovation Bainbridge Township, Geauga County, Ohio*. Columbus (OH): Ohio Department of Natural Resources Division of Mineral Resources Management.

- Bamberg, S. & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27, 14-25.
- Bamberger, M. & Oswald, R. E. (2012). Impacts of gas drilling on human and animal health. *New Solutions*, 22(1), 51-77.
- BAPE (Bureau d'audiences publiques sur l'environnement). (2011a). *Sustainable Development of the Shale Gas Industry in Québec. Excerpts from Report 273*. Québec (QC): BAPE.
- BAPE (Bureau d'audiences publiques sur l'environnement). (2011b). *Développement durable de l'industrie des gaz de schiste au Québec. Rapport 273*. Québec (QC): BAPE.
- Barker, J. F. & Fritz, P. (1981). The occurrence and origin of methane in some groundwater flow systems. *Canadian Journal of Earth Sciences*, 18(12), 1802-1816. doi: 10.1139/e81-168.
- Bexte, D. C., Willis, M., De Bruijn, G. G., Eitzen, B., & Fouillard, E. (2008). Improved cementing practice prevents gas migration. *World Oil*, 229(6).
- Birkholzer, J. T., Nicot, J. P., Oldenburg, C. M., Zhou, Q., Kraemer, S., & Bandilla, K. (2011). Brine flow up a well caused by pressure perturbation from geologic carbon sequestration: Static and dynamic evaluations. *International Journal of Greenhouse Gas Control*, 5(4), 850-861. doi: 10.1016/j.ijggc.2011.01.003.
- Bjørlykke, K. (1989). *Sedimentology and Petroleum Geology*. Berlin, Germany: Springer-Verlag.
- Bloomberg, M. R. & Mitchell, G. P. (2012, August 23). Fracking is too Important to Foul Up, *Washington Post*.
- Bourgoyne, A. T., Scott, S. L., & Manowski, W. (2000). *A Review of the Sustained Casing Pressure Occurring on the OCS*. Washington (DC): U.S. Department of the Interior, Minerals Management Services.
- Bradbury, J., Obeiter, M., Draucker, L., Wang, W., & Stevens, A. (2013). *Clearing the Air: Reducing Upstream Greenhouse Gas Emissions from U.S. Natural Gas Systems. Working Paper*. Washington (DC): World Resources Institute.
- Brisson, G., Campagna, C., Carrier, G., Chevalier, P., Deger, L., Gauvin, D.,... Smargiassi, A. (2010). *Etat des connaissances sur la relation entre les activités liées au gaz de schiste et la santé publique*. Québec (QC): Institut national de santé publique du Québec.
- Broomfield, M. (2012). *Support to the Identification of Potential Risks for the Environment and Human Health Arising from Hydrocarbon Operations Involving Hydraulic Fracturing in Europe*. Didcot, United Kingdom: European Commission DG Environment.

- Brouyère, S., Jeannin, P. Y., Dessargues, A., Goldscheider, N., Popescu, I. C., Sauter, M., . . . Zwahlen, F. (2011). *Evaluation and Validation of Vulnerability Concepts Using a Physically Based Approach*. Paper presented at 7th Conference on Limestone Hydrology and Fissure Media, Besancon, France.
- Brown, A. (2000). Evaluation of possible gas microseepage mechanisms. *American Association of Petroleum Geologists Bulletin*, 84(11), 1775-1789.
- Brown, J. (2010). *Drilling 101*. Paper presented in person, Sibley Hall, Cornell University, Ithica (NY).
- Burnham, A., Han, J., Clark, C. E., Wang, M., Dunn, J. B., & Palou-Rivera, I. (2012). Life-cycle greenhouse gas emissions of shale gas, natural gas, coal, and petroleum. *Environmental Science and Technology*, 46(2), 619-627.
- Cabot Oil & Gas Corporation. (2012). *Uniquely Cabot. 2012 Annual Report*. Houston (TX): Cabot Oil & Gas Corporation.,
- Canadian Water Network. (2013). Hydraulic Fracturing and Water Competition Announcement. Retrieved January 2014, from <http://www.cwn-rce.ca/initiatives/research-calls/hydraulic-fracturing-and-water-competition-announcement/>.
- CAPP (Canadian Association of Petroleum Producers). (2003). *Guide for Effective Public Involvement*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012a). *Responsible Canadian Energy. 2012 Progress Report Summary*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012b). *Baseline Groundwater Testing*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012c). *Anomalous Induced Seismicity: Assesment, Monitoring, Mitigation and Response*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012d). *Fluid Transport, Handling, Storage and Disposal*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012e). *Water Sourcing, Measurement, and Reuse*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012f). *Wellbore Construction and Quality Assurance*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012g). *Fracturing Fluid Additive Risk Assessment and Management*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2012h). *Fracturing Fluid Additive Disclosure*. Calgary (AB): CAPP.
- CAPP (Canadian Association of Petroleum Producers). (2013a). New Brunswick. Retrieved January 2014, from <http://www.capp.ca/canadaIndustry/industryAcrossCanada/Pages/NewBrunswick.aspx>.
- CAPP (Canadian Association of Petroleum Producers). (2013b). Land and Reclamation. Retrieved March 2013, from <http://www.capp.ca/environmentCommunity/land/Pages/RestoringLand.aspx>.

- CAPP (Canadian Association of Petroleum Producers). (2014). Basic Statistics. Retrieved January 2014, from <http://www.capp.ca/library/statistics/basic/Pages/default.aspx>.
- Carter, T., Fortner, L., & Béland Otis, C. (2009). *Shale Gas Opportunities in Southern Ontario*. Paper presented at 48th Annual OPI Conference and Trade Show, Sarnia (ON).
- Cathles, L.M., Brown, L., Taam, M., & Hunter, A. (2012). A commentary on “The greenhouse-gas footprint of natural gas in shale formations” by R.W. Howarth, R. Santoro, and Anthony Ingraffea. *Climate Change*, 113(2), 525–535.
- CBC (Canadian Broadcasting Corporation). (2011). Interactive: What a Hydraulic Fracturing Site Looks Like. Retrieved February 2013, from http://www.cbc.ca/nb/features/fracturedfuture/annotated_site.html.
- CBC (Canadian Broadcasting Corporation). (2013). Maliseet Anti-Shale Gas Letter Delivered to Premier’s Office. Retrieved January 2014, from <http://www.cbc.ca/news/canada/new-brunswick/maliseet-anti-shale-gas-letter-delivered-to-premier-s-office-1.2253996>.
- CCA (Council of Canadian Academies). (2012). *Integrating Emerging Technologies into Chemical Safety Assessment*. Ottawa (ON): The Expert Panel on the Integrated Testing of Pesticides, CCA.
- CCA (Council of Canadian Academies). (2013). *Water and Agriculture in Canada: Towards Sustainable Management of Resources*. Ottawa (ON): Expert Panel on Sustainable Use of Water in the Agricultural Landscapes of Canada, CCA.
- CDPHE (Colorado Department of Public Health and Environment). (2010). *Public Health Implications of Ambient Air Exposures as Measured in Rural and Urban Oil & Gas Development Areas – An Analysis of 2008 Air Sampling Data*. Denver (CO): CDPHE.
- Chapman, A. & Venables, S. (2012). *Projections of Surface Water Use for Hydraulic Fracturing in the Montney Trend*. Paper presented at Unconventional Gas Technical Forum, Victoria (BC).
- Chapman, S. W., Parker, B. L., Cherry, J. A., McDonald, S. D., Goldstein, K. J., Frederick, J. J.,... Williams, C. E. (2013). Combined MODFLOW-FRACTRAN application to assess chlorinated solvent transport and remediation in fractured sedimentary rock. *Remediation*, 23(3), 7-35.
- Chesapeake Energy. (2012). *Water Used in Deep Shale Gas Exploration Fact Sheet*. Oklahoma City (OK): Chesapeake Energy.
- Cheung, K., Klassen, P., Mayer, B., Goodarzi, F., & Aravena, R. (2010). Major ion and isotope geochemistry of fluids and gases from coalbed methane and shallow groundwater wells in Alberta, Canada. *Applied Geochemistry*, 25, 1307-1329.

- CIA (Central Intelligence Agency). (2013). The World Factbook. Country Comparison: Natural Gas - Production. Retrieved February 2013, from <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2249rank.html?countryName=Canada&countryCode=ca®ionCode=noa&rank=5#ca>.
- Clark, I. D., Al, T., Jensen, M., Kennell, L., Mazurek, M., Mohapatra, R., & Raven, K. G. (2013). Paleozoic-aged brine and authigenic helium preserved in an Ordovician shale aquiclude. *Geology*, *41*(9), 951-954.
- Cohen, H. A., Parratt, T., & Andrews, C. B. (2013). Discussion of papers "Potential contaminant pathways from hydraulically fractured shale to aquifers". *Groundwater*, *51*(3), 317-319.
- Colborn, T., Kwiatkowski, C., Schultz, K., & Bachran, M. (2011). Natural gas operations from a public health perspective. *Human and Ecological Risk Assessment*, *17*, 1039-1056.
- Comité de l'évaluation environnementale stratégique sur le gaz de schiste. (2012). *Implementation Plan for the Strategic Environmental Assessment on Shale Gas*. Québec (QC): Gouvernement du Québec.
- Committee of Energy and Commerce. (2011). *Chemicals Used in Hydraulic Fracturing*. Washington (DC): U.S. House of Representatives.
- Cooke Jr., C. E. (1979). Radial differential temperature (RDT) logging – A new tool for detecting and treating flow behind casing. *Journal of Petroleum Technology*, *31*(6), 676-682.
- Cooley, H. & Donnelly, K. (2012). *Hydraulic Fracturing and Water Resources: Separating the Frack from the Fiction*. Oakland (CA): Pacific Institute.
- Cottle, M. & Guidotti, T. (1990). Process chemical in the oil and gas industry: Potential occupational hazards, toxicology, and industrial health. *Toxicology and Industrial Health*, *6*, 41-56.
- Coussens, C. & Martinez, R. M. (2014). *Health Impact Assessment of Shale Gas Extraction: Workshop Summary*. Washington (DC): National Academy of Sciences.
- Covello, V. T. (1983). The perception of technological risks: A literature review. *Technological Forecasting and Social Change*, *23*(4), 285-297.
- Covello, V. T. (1992). Risk Communication: An Emerging Area of Health Communication Research. In S. A. Deetz (Ed.), *Communications Yearbook*. Newbury Park (CA): Sage Publications.
- Crouse, D. L., Peters, P. A., Van Donkelaar, A., Goldberg, M. S., Villeneuve, P. J., Brion, O.,... Burnett, R. T. (2012). Risk of nonaccidental and cardiovascular mortality in relation to long-term exposure to low concentrations of fine particulate matter: A Canadian national-level cohort study. *Environmental Health Perspectives*, *120*(5), 708-714.
- CSA Group (Canadian Standards Association Group). (2012). *Geological Storage of Carbon Dioxide (Z741-12)*. Toronto (ON): CSA Group.

- Daigle, P. (2010). A summary of the environmental impacts of roads, management responses, and research gaps: A literature review. *BC Journal of Ecosystems and Management*, 10(3), 65-89.
- Davey, E. (2012). Written Ministerial Statement by Edward Davey: Exploration for Shale Gas. Retrieved January 2014, from <https://www.gov.uk/government/speeches/written-ministerial-statement-by-edward-davey-exploration-for-shale-gas>.
- DeMong, K., Fahlman, J., & Schnell, R. (2010). *Coping With Surface and Downhole Interference on Tightly Spaced Completions Pads in the Horn River*. Paper presented at Canadian Unconventional Resources and International Petroleum Conference, Calgary (AB).
- Dittrick, P. (2012, July 30). Drought raising water costs, scarcity concerns for Shale Plays. *Oil and Gas Journal*.
- DNV (Det Norske Veritas). (2013). *Recommended Practice: Risk Management of Shale Gas Developments and Operations (DNV-RP-U301)*. Høvik, Norway: DNV.
- Dolley, T. P. (2012). *2010 Minerals Yearbook. Silica*. USGS.
- Dondiego, M. (2013). New Fracking Study, New Controversy. Retrieved January 2014, from <http://www.legislativegazette.com/Articles-c-2013-09-23-85187.113122-New-fracking-study-new-controversy.html>.
- Duchaine, Y., Tourigny, Y., Beaudoin, G., & Dupuis, C. (2012). *Potential en gaz naturel dans le groupe d'Utica*. Québec (QC): Université Laval.
- Dusseault, M., Gray, M., & Nawrocki, P. (2000). *Why Oihwells Leak: Cement Behavior and Long-Term Consequences*. Paper presented at Society of Petroleum Engineers International Oil and Gas Conference and Exhibition, Beijing, China.
- Dusseault, M. (2013). *Geomechanical Aspects of Shale Gas Development*. Paper presented at EUROCK 2013, Wroclaw, Poland.
- Dutzik, T., Ridlington, E., & Rumpler, J. (2012). *The Costs of Fracking*. Santa Barbara (CA): PennEnvironment Research and Policy Center.
- EC/R Incorporated. (2011). *Oil and Natural Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution. Background Technical Support Document for Proposed Standards*. Chapel Hill (NC): EPA.
- EEA (European Environmental Agency). (2001). *Late Lessons from Early Warnings: The Precautionary Principle 1896–2000*. Copenhagen, Denmark: EEA.
- EEA (European Environmental Agency). (2013). *Late Lessons from Early Warnings: Science, Precaution, Innovation*. Copenhagen, Denmark: EEA.
- Efstathiou, J. & Drajem, M. (2013). Drillers Silence Fracking Claims With Sealed Settlements. Retrieved August 2013, from <http://www.bloomberg.com/news/2013-06-06/drillers-silence-fracking-claims-with-sealed-settlements.html>.
- EIA (U.S. Energy Information Administration). (1998). *Natural Gas 1998. Issues and Trends*. Washington (DC): EIA.

- EIA (U.S. Energy Information Administration). (2011). Maps: Exploration, Resources, Reserves, and Production. Retrieved August 2013, from http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/maps/maps.htm.
- EIA (U.S. Energy Information Administration). (2012). *Annual Energy Outlook 2012*. Washington (DC): EIA.
- EIA (U.S. Energy Information Administration). (2014). Henry Hub Natural Gas Spot Price. Retrieved January 2014, from <http://www.eia.gov/dnav/ng/hist/rngwhhdm.htm>.
- Einarson, M. (2006). Multilevel Groundwater Monitoring. In *Practical Handbook of Environmental Site Characterization and Groundwater Monitoring* (2nd edition). Boca Raton (FL): CRC Taylor & Francis.
- Einarson, M. D. & Cherry, J. A. (2002). A new multilevel ground water monitoring system using multichannel tubing. *Groundwater Monitoring and Remediation*, 22(4), 52-65.
- Eklund, D. (2005). *Penetration Due to Filtration Tendency of Cement Based Grouts*. Stockholm, Sweden: Royal Institute of Technology.
- Eligon, J. (2013, January 27). An Oil Boom Takes a Toll on Health Care, *The New York Times*.
- Encana. (2013). Courtesy Matters. Retrieved September 2013, from <http://www.encana.com/communities/courtesy-matters/>.
- Entrekin, S., Evans-White, M., Johnson, B., & Hagenbuch, E. (2011). Rapid expansion of natural gas development poses a threat to surface waters. *Frontiers in Ecology and the Environment*, 9(9), 503-511. doi: 10.1890/110053.
- Environment Canada. (2011). *An Integrated Oil Sands Environment Monitoring Plan*. Ottawa (ON): Environment Canada.
- EPA (Environmental Protection Agency). (1993). *Guidance for Evaluation the Technical Impracticability of Ground-Water Restoration*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2009a). *Greenhouse Gas Emissions Reporting From the Petroleum and Natural Gas Industry. Background Technical Support Document*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2009b). *National Primary Drinking Water Regulations*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2009c). *Ozone and Your Health*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2010). *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2008*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2011a). *Oil and Natural Gas Sector: New Source Performance Standards and National Emissions Standards for Hazardous Air Pollutants Reviews*. Washington (DC): EPA.

- EPA (Environmental Protection Agency). (2011b). *Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2012a). Regulation of Hydraulic Fracturing Under the Safe Drinking Water Act. Retrieved July 2013, from http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroreg.cfm.
- EPA (Environmental Protection Agency). (2012b). Health Effects. Retrieved September 2013, from <http://www.epa.gov/glo/health.html>.
- EPA (Environmental Protection Agency). (2012c). *Oil and Natural Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution. Background Supplemental Technical Support Document for the Final New Source Performance Standards*. Chapel Hill (NC): EPA.
- EPA (Environmental Protection Agency). (2013a). Nitrogen Dioxide. Health. Retrieved September 2013, from <http://www.epa.gov/airquality/nitrogenoxides/health.html>.
- EPA (Environmental Protection Agency). (2013b). *EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sectors*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2013c). *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2011*. Washington (DC): EPA.
- EPA (Environmental Protection Agency). (2013d). Particulate Matter (PM). Health. Retrieved September 2013, from <http://www.epa.gov/pm/health.html>.
- Erickson, P. A. (1994). *A Practical Guide to Environmental Impact Assessment*. San Diego (CA): Academic Press.
- Erno, B. & Schmitz, R. (1996). Measurements of soil gas migration around oil and gas wells in the Lloydminster area. *Journal of Canadian Petroleum Technology*, 35(7). doi: 10.2118/96-07-05.
- Esswein, E. J., Breitenstein, M., & Snawder, J. (2012). *NIOSH Field Effort to Assess Chemical Exposures in Oil and Gas Workers: Health Hazards in Hydraulic Fracturing*. Denver (CO): NIOSH.
- Ethridge, S. (2010). *Interoffice Memorandum: Health Effects Reviews of Barnett Shale Formation Area Monitoring Projects*. Austin (TX): Texas Commission on Environmental Quality.
- European Parliament. (2011). *Impacts of Shale Gas and Shale Oil Extraction on the Environment and on Human Health*. Brussels, Belgium: European Parliament.
- Ewen, C., Borchardt, D., Richter, S., & Hammerbacher, R. (2012). *Hydrofracking Risk Assessment. Study Concerning the Safety and Environmental Compatibility of Hydrofracking for Natural Gas Production from Unconventional Reservoirs (Executive Summary)*. Berlin, Germany: ExxonMobil Production Deutschland GmbH.

- Eynon, G. (2012). *Energy: The Impact of Hydraulic Fracture Stimulation on Regulations and the Economy. Panel Discussion*. Paper presented at Hydraulic Fracture Stimulation, Banff (AB).
- Fierro, M. A., O'Rourke, M. K., & Burgess, J. L. (2001). *Adverse Health Effects of Exposure to Ambient Carbon Monoxide*. Tucson (AZ): College of Public Health, University of Arizona.
- Figueroa, J. D., Fout, T., Plasynski, S., McIlvried, H., & Srivastava, R. D. (2008). Advances in CO₂ capture technology – The U.S. department of energy's carbon sequestration program. *International Journal of Greenhouse Gas Control*, 2(1), 9-20.
- Fisher, K. & Warpinski, N. (2011). *Hydraulic Fracture-Height Growth: Real Data*. Paper presented at Society of Petroleum Engineers Annual Technical Conference and Exhibition, Denver (CO).
- Flemisch, B., Darcis, M., Erbertseder, K., Faigle, B., Lausser, A., Mosthaf, K.,... Helmig, R. (2011). DuMu^x: Dune for multi-flow and transport in porous media. *Advances in Water Resources*, 34, 1102-1112.
- Flewelling, S. A., Tymchak, M. P., & Warpinski, N. (2013). Hydraulic fracture height limits and fault interactions in tight oil and gas formations. *Geophysical Research Letters* 40, 1-5. doi: 10.1002/grl.50707.
- Flewelling, S. A. & Sharma, M. (2014). Constraints on upward migration of hydraulic fracturing fluid and brine. *Groundwater*, 52(1). doi: 10.1111/gwat.12095.
- FNFN (Fort Nelson First Nation). (2012). *Respect for the Land: Fort Nelson First Nation Strategic Land Use Plan*. Fort Nelson (BC): Fort Nelson First Nation.
- Focazio, M. J., Reilly, T. E., Rupert, M. G., & Helsel, D. R. (2002). *Assessing Ground-Water Vulnerability to Contamination: Providing Scientifically Defensible Information for Decision Makers*. Denver (CO): USGS.
- Folkes, D. J. (1982). Control of contaminant migration by the use of liners. *Canadian Geotechnical Journal* 19(3), 320-344.
- Fountain, J. C. & Jacobi, R. D. (2000). Detection of buried faults and fractures using soil gas analysis. *Environmental and Engineering Geoscience*, 6(3), 201-208.
- Fraser Basin Council. (2012). *Identifying Health Concerns Relating to Oil & Gas Development in Northeastern BC*. Vancouver (BC): BC Ministry of Health.
- Frind, E. O., Molson, J. W., & Rudolph, D. L. (2006). Well vulnerability: A quantitative approach for source water protection. *Groundwater*, 44(5), 732-742. doi: 10.1111/j.1745-6584.2006.00230.x.
- Gassiat, C., Gleeson, T., Lefebvre, R., & McKenzie, J. (2013). Hydraulic fracturing in faulted sedimentary basins: Numerical simulation of potential contamination of shallow aquifers over long time scales. *Water Resources Research*, 40(12), 8310-8327. doi: 10.1002/2013WR014287.

- Gautschi, A. (2001). Hydrogeology of a fractured shale (Opalinus Clay): Implications for deep geological disposal of radioactive wastes. *Hydrogeology Journal*, 9, 97-107.
- GE (General Electric). (2014). FlexEfficiency* 50 Combined Cycle Power Plant. Retrieved January 2014, from http://www.ge-energy.com/products_and_services/products/gas_turbines_heavy_duty/flexefficiency_50_combined_cycle_power_plant.jsp.
- Geoscience B.C. (2011a). Geoscience BC Announces Collaborative Horn River Basin Water Study Phase II Activities. Retrieved January 2014, from <http://www.geosciencebc.com/s/NewsReleases.asp?ReportID=478074>.
- Geoscience B.C. (2011b). *Montney Water Project. Project Completion Report*. Vancouver (BC): Geoscience B.C.
- Geoscience B.C. (2012). Geoscience BC Announces Collaborative Regional Seismic Program. Retrieved April 2013, from http://www.geosciencebc.com/s/NewsReleases.asp?ReportID=545816&_Type=News&_Title=Geoscience-BC-Announces-Collaborative-Regional-Seismic-Program.
- Gevantman, L. H. (2013). Solubility of Selected Gases. In W. M. Haynes (94th Ed.), *Handbook of Chemistry and Physics*. Boca Raton (FL): CRC Press/Taylor and Francis.
- Gillis, D. (2012). Fort Nelson First Nation to Discuss Massive Shale Gas Water Licenses Nov. 13 in Vancouver. Retrieved March 2013, from <http://thecanadian.org/item/1805-fort-nelson-first-nation-to-discuss-mass>.
- Gilman, J. B., Lerner, B. M., Kuster, W. C., & de Gouw, J. A. (2013). Source signature of volatile organic compounds from oil and natural gas operations in northeastern Colorado. *Environmental Science and Technology*, 47(3), 1297-1305. doi: 10.1021/es304119a.
- Gimmi, T., Waber, H. N., Gautschi, A., & Rubel, A. (2007). Stable water isotopes in pore water of Jurassic argillaceous rocks as tracers for solute transport over large spatial and temporal scales. *Water Resources Research*, 43(4). doi: 10.1029/2005WR004774.
- Goldstein, B. D., Kriesky, J., & Pavliakova, B. (2012). Missing from the table: Role of the environmental public health community in governmental advisory commissions related to Marcellus Shale drilling. *Environmental Health Perspectives*, 120(4), 483-486.
- Goldstein, B. D., Bjerke, E. F., & Kriesky, J. (2013). Challenges of unconventional shale gas development: So what's the rush?. *Notre Dame Journal of Law, Ethics & Public Policy*, 27(1), 149-185.
- GoodGuide. (2011). Hazardous Air Pollutants (Clean Air Act). Retrieved January 2014, from http://scorecard.goodguide.com/chemical-groups/one-list.tcl?short_list_name=hap.

- Gorody, A. W. (2012). Factors affecting the variability of stray gas concentration and composition in groundwater. *Environmental Geosciences*, 19(1), 17-31. doi: 10.1306/eg.12081111013.
- Gouvernement du Québec. (2013). *Gazette officielle du Québec. Laws and Regulations*. Vol. 22. Québec (QC): Gouvernement du Québec.
- Gouvernement du Québec. (2014). Strategic Environmental Assessment on Shale Gas. Retrieved January 2014, from <http://ees-gazdeschiste.gouv.qc.ca/en/>.
- Government of Alberta. (2011). *Occupational Injuries and Diseases in Alberta. Upstream Oil and Gas Industries 2006 to 2010*. Edmonton (AB): Government of Alberta.
- Government of Canada. (1982). *Constitution Act, 1982*. Ottawa (ON): Government of Canada.
- Government of Canada & Government of Alberta. (n.d.). *Joint Canada Alberta Implementation Plan for Oil Sands Monitoring*. Government of Canada and the Government of Alberta.
- Government of New Brunswick. (2013a). *The New Brunswick Oil and Natural Gas Blueprint*. Fredericton (NB): Government of New Brunswick.
- Government of New Brunswick. (2013b). *Responsible Environmental Management of Oil and Natural Gas Activities in New Brunswick: Rules for Industry*. Fredericton (NB): Government of New Brunswick.
- Government of New Brunswick. (2014). Oil & Natural Gas in NB. Retrieved January 2014, from http://www2.gnb.ca/content/gnb/en/corporate/promo/natural_gas_from_shale/fact_sheets/oil_natural_gas_innb.html.
- Government of Newfoundland and Labrador. (2013). Minister Provides Position on Hydraulic Fracturing. Retrieved January 2014, from <http://www.releases.gov.nl.ca/releases/2013/nr/1104n06.htm>.
- Gregory, K. B., Radisav, D. V., & Dzombak, D. A. (2011). Water management challenges associated with the production of shale gas by hydraulic fracturing. *Elements*, 7(3), 181-186. doi: 10.2113/gselements.7.3.181.
- GRES (Groupe de recherche sur l'eau souterraine). (2013). Projet/PACES/Mise en Contexte. Retrieved January 2014, from http://gres.uqat.ca/FR/PACES_MISE_EN_CONTEXTE.
- GW Solutions. (2012). *Montney Water Project – Hydrogeologic Review*. Dawson Creek (BC): City of Dawson Creek.
- Halliburton. (2008). *U.S. Shale Gas. An Unconventional Resource. Unconventional Challenges*. Houston (TX): Halliburton.
- Hamlat, M. S., Djeflal, S., & Kadi, H. (2001). Assessment of radiation exposures from naturally occurring radioactive materials in the oil and gas industry. *Applied Radiation and Isotopes*, 55(1), 141-146.

- Hawkes, C. D., McLellan, P. J., Zimmer, U., & Bachu, S. (2004). *Geomechanical Factors Affecting Geological Storage of CO₂ in Depleted Oil and Gas Reservoirs: Risks and Mechanisms*. Paper presented at Gulf Rocks 2004, the 6th North America Rock Mechanics Symposium (NARMS), Houston (TX).
- Hayes, B.J.R. & Archibald, H.B. (2012). *Scoping Study of Unconventional Oil and Gas Potential*. Whitehorse (YK): Yukon Geological Survey.
- Hayhoe K., Kheshgi H.S., Jain A.K., & Wuebbles D.J. (2002). Substitution of natural gas for coal: Climatic effects of utility sector emissions. *Climate Change*, 54, 107-139.
- Health Canada. (1996). *Health-Based Tolerable Daily Intakes/Concentrations and Tumorigenic Doses/Concentrations for Priority Substances*. Ottawa (ON): Health Canada.
- Health Canada. (2002). *Health Policy Research Bulletin*. Ottawa (ON): Health Canada.
- Health Canada. (2012). *Guidelines for Canadian Drinking Water Quality—Summary Table*. Ottawa (ON): Health Canada.
- Healy, J.H., Rubey, W.W., Griggs, D.T., & Raleigh, C.B. (1968). The Denver earthquakes. *Science*, 161(3848), 1301-1310.
- Heath, G.A. & Mann, M.K. (2012). Background and reflections on the life cycle assessment harmonization project. *Journal of Industrial Ecology*, 16(S1), S8-S11.
- Heilweil, V.M., Stolp, B.J., Kimball, B.A., Susong, D.D., Marston, T.M., & Gardner, P.M. (2013). A stream-based methane monitoring approach for evaluating groundwater impacts associated with unconventional gas development. *Groundwater*, 51(4), 511-524.
- Herz, S., Vina, A., & Sohn, J. (2007). *Development Without Conflict. The Business Case for Community Consent*. Washington (DC): World Resources Institute.
- Hill, J. (2013). Eagle Ford Trucking Accident Risk. Retrieved August 2013, from <http://www.rhlawgroup.com/blog/eagle-ford-trucking-accident-risk/>.
- Holder, J. (2004). *Environmental Assessment: The Regulation of Decision Making*. New York (NY): Oxford University Press.
- Honeycutt, M. (2012). *Air Quality Impacts of Natural Gas Operations in Texas*. Austin (TX): Texas Commission on Environmental Quality.
- Horn River Basin Producers Group. (2010). Horn River Basin/Shale Gas Frequently Asked Questions. Retrieved September 2013, from http://www.northernrockies.ca/assets/Business/Producers~Group/HRBPG_FAQ.pdf.
- House of Commons Energy and Climate Change Committee. (2011). *Shale Gas. Fifth Report of Sessions 2010–12*. London, United Kingdom: House of Commons.
- Howarth, R., Shindell, D., Santoro, R., Ingraffea, A., Phillips, N., & Townsend-Small, A. (2012). *Methane Emissions from Natural Gas Systems*. Washington (DC): National Climate Assessment.

- Howarth, R., Santoro, R., & Ingraffea, A. (2011). Methane and the greenhouse-gas footprint of natural gas from shale formations. *Climate Change*, 106(4), 670-690. doi: 10.1007/s10584-011-0061-5.
- Hughes, D. J. (2013). *Drill, Baby, Drill*. Santa Rosa (CA): Post Carbon Institute.
- Hughes, T. P. (1983). *Networks of Power: Electrification in Western Society, 1880–1930*. Baltimore (MD): Johns Hopkins University Press.
- Hultman, N., Rebois, D., Scholten, M., & Ramig, C. (2011). The greenhouse impact of unconventional gas for electricity generation. *Environmental Research Letters*, 6(4). doi: 10.1088/1748-9326/6/4/044008.
- Hume, M. (2012, September 9). Dawson Creek and Shell Elude Water Shortage Crisis. *The Globe and Mail*.
- IAIA (International Association for Impact Assessment). (1999). *Principles of Environmental Impact Assessment Best Practice*. Fargo (ND): IAIA.
- ICO₂N. (2013). Canadian Carbon Capture and Storage Projects. Retrieved September 2013, from <http://www.ico2n.com/ccs-in-canada/first-projects-in-canada>.
- IEA (International Energy Agency). (2011). *Are We Entering a Golden Age of Gas? World Energy Outlook 2011*. Paris, France: IEA.
- IEA (International Energy Agency). (2012a). *Energy Statistics of OECD Countries 2012*. Paris, France: IEA.
- IEA (International Energy Agency). (2012b). *Golden Rules for a Golden Age of Gas*. Paris, France: IEA.
- IEA (International Energy Agency). (2013). *Energy Balances of OECD Countries (2013 Edition)*. Paris, France: IEA.
- Industry Canada. (2010). Voluntary Codes Guide - What is a Voluntary Code? Retrieved September 2013, from <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca00963.html>.
- Infante, L., Hopkins, J., Obenshain, K., & Fisher, E. (2012). *Emerging Natural Gas Issues: Concerns and Activities Surrounding Hydraulic Fracturing and the Development of Shale Gas*. Washington (DC): Edison Electric Institute.
- Interorganizational Committee on Guidelines and Principles for Social Impact Assessment. (1994). *Guidelines and Principles for Social Impact Assessment*. Washington (DC): National Oceanic and Atmospheric Administration.
- IPCC (Intergovernmental Panel on Climate Change). (2007). *Climate Change 2007 – The Physical Science Basis*. New York (NY): IPCC.
- IPCC (Intergovernmental Panel on Climate Change). (2013). *Climate Change 2013: The Physical Science Basis*. New York (NY): IPCC.
- Jackson, R. & Dusseault, M. (2013). *Seepage Pathway Assessment for Natural Gas to Shallow Groundwater During Well Stimulation, Production, and After Abandonment*. Paper presented at GéoMontréal 2013, Montréal (QC).

- Jackson, R. B., Vengosh, A., Darrah, T. H., Warner, N. R., Down, A., Poreda, R. J.,... Karr, J. D. (2013a). Increased stray gas abundance in a subset of drinking water wells near Marcellus Shale gas extraction. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 110(8), 11250-11255. doi: 10.1073/pnas.1221635110.
- Jackson, R.E., Gorody, A.W., Mayer, B., Roy, J.W., Ryan, M.C., & Van Stempvoort, D.R. (2013b). Groundwater protection and unconventional gas extraction: The critical need for field-based hydrogeological research. *Groundwater*, 51(4), 488-510. doi: 10.1111/gwat.12074.
- Jacquet, J. (2009). *Energy Boomtowns and Natural Gas: Implications for Marcellus Shale Local Governments and Rural Communities*. NERC RD Rural Development Paper No. 43. University Park (PA): The Northeast Regional Center for Rural Development and Pennsylvania State University.
- Jacquet, J. (2013). *Risks to Communities from Shale Gas Development*. Paper presented at Workshop on Risks from Shale Gas Development, Washington (DC).
- Jewell, K. P. & Wilson, J. T. (2011). A new screening method for methane in soil gas using existing groundwater monitoring wells. *Ground Water Monitoring and Remediation*, 31(3), 82-94. doi: 10.1111/j1745-6592.2011.001345.x.
- Jiang, M., Griffin, W. M., Hendrickson, C., Jaramillo, P., VanBriesen, J., & Venkatesh, A. (2011). Life cycle greenhouse gas emissions of Marcellus shale gas. *Environmental Research Letters*, 6(3), 034014.
- Johnson, E. (2012). *Water Issues Associated with Hydraulic Fracturing in Northeast British Columbia*. Paper presented at Unconventional Gas Technical Forum, Victoria (BC).
- Johnson, E. & Johnson, L. A. (2012). Hydraulic fracture water usage in northeast British Columbia: Locations, volumes and trends. *Geoscience Reports 2012, B.C. Ministry of Energy and Mines 2012*, 41-63.
- Johnson, N. (2010). *Pennsylvania Energy Impacts Assessment. Report 1: Marcellus Shale Natural Gas and Wind*. Harrisburg (PA): The Nature Conservancy.
- Johnson, N. (2011). *Pennsylvania Energy Impacts Assessment*. Harrisburg (PA): The Nature Conservancy.
- Jones, C. F. (2010). A landscape of energy abundance: Anthracite coal canals and the roots of american fossil fuel dependence, 1820–1860. *Environmental History*, 15, 449-484. doi: 10.1093/envhis/emq057.
- Kahrilas, G., Blotevogal, J., Corrin, E. R., & Borch, T. (2013). *Fate of Hydraulic Fracturing Chemicals Under Down-Hole Conditions*. Paper presented at ACS National Meeting, Indianapolis (IN).
- Keighley, D. & Maher, C. (2010). *A Preliminary Assessment of Carbon Storage Capacity in Deep Underground Geological Formations of New Brunswick*. Fredericton (NB): University of New Brunswick.

- Kelly, W. R. & Mattisoff, G. (1985). The effects of a gas well blow out on groundwater chemistry. *Environmental Geology and Water Sciences*, 7(7), 205-213.
- Kemball-Cook, S., Bar-Ilan, A., Grant, J., Parker, L., Jung, J., Santamaria, W.,... Yarwood, G. (2010). Ozone impacts of natural gas development in the Haynesville Shale. *Environmental Science and Technology*, 44(24), 9357-9363.
- Keranen, K. M., Savage, H. M., Abers, G. A., & Cochran, E. S. (2013). Potentially induced earthquakes in Oklahoma, USA: Links between wastewater injection and the 2011 M_w 5.7 earthquake sequence. *Geology*, 41(6), 699-702.
- King, G. E. (2012). *Hydraulic Fracturing 101: What Every Representative, Environmentalists, Regulator, Reporter, Investor, University Researcher, Neighbor and Engineer Should Know About Estimating Frac Risk and Improving Frac Performance in Unconventional Gas and Oil Wells*. Paper presented at SPE Hydraulic Fracturing Technology Conference, The Woodlands, Texas.
- Korfmacher K.S., Jones W.A., Malone S.L., & Vinci L.F. (2013). Public health and high volume hydraulic fracturing. *New Solutions*, 23(1), 13-31.
- Kresic, N. & Mikszewski, A. (2012). *Hydrogeological Conceptual Site Models: Data Analysis and Visualization*. Boca Raton (FL): CRC Press.
- Kueper, B. W., Haase, C. S., & King, H. L. (1992). Leakage of dense, nonaqueous phase liquids from waste impoundments constructed in fractured rock and clay: Theory and case history. *Canadian Geotechnical Journal*, 29, 234-244.
- Lackey, S.O., Myers, W.F., Christopherson, T.C., Gottula, J.J. (2009). *Nebraska Grout Task Force*. Lincoln (NE): University of Nebraska.
- Lapierre, L. (2012). *The Path Forward. Part I: Public Meeting Summary*. Fredericton (NB): The Government of New Brunswick.
- Lapp, S. L. & Whiten, R. (2012). *British Columbia/Alberta Partnership for Applied Long-Term Watershed Management Research in the Peace River Region's Upper Kiskatinaw River*. Kamloops (BC): Forum for Research and Extension in Natural Resources.
- Lavoie, D., Chen, Z., Pinet, N., & Lyster, S. (2012). *A Review of November 24–25, 2011 Shale Gas Workshop. Resource Evaluation Methodology*. Calgary (AB): Geological Survey of Canada.
- Leblanc, D., Huskins, L., & Lestz, R. (2011). Propane-based fracturing improves well performance in Canadian tight reservoirs. *World Oil*, July 39-46.
- Lemieux, J.M. (2011). The potential impact of underground geological storage of carbon dioxide in deep saline aquifers on shallow groundwater resources. *Hydrogeology Journal*, 19, 457-778. doi: 10.1007/s10040-011-0715-4.
- Levson, V., Pyle, L., & Fournier, M. (2012). *NWT Open File 2012-06: Identification of Potential Silica Sand Deposits in the Northwest Territories*. Yellowknife (NT): Northwest Territories Geoscience Office.

- Liroff, R. (2012). *Extracting the Facts: An Investor Guide to Disclosing Risks from Hydraulic Fracturing Operations*. New York (NY): Investor Environmental Health Network and Interfaith Center on Corporate Responsibility.
- Litovitz, A., Curtright, A., Abramzon, S., Burger, N., & Samaras, C. (2013). Estimation of regional air-quality damages from Marcellus Shale natural gas extraction in Pennsylvania. *Environmental Research Letters*, 8(1).
- Logan, J., Heath, G., Paranhos, E., Boyd, W., & Carlson, K. (2012). *Natural Gas and the Transformation of the US*. Golden (CO): Joint Institute for Strategic Energy Analysis.
- Lolon, E. P., Cipolla, C. L., & Weijers, L. (2009). *Evaluation Horizontal Well Placement and Hydraulic Fracture Spacing/Conductivity in the Bakken Formation, North Dakota*. Paper presented at Society of Petroleum Engineers Annual Technical Conference and Exhibition, New Orleans (LA).
- Lowen Hydrogeology Consultants Ltd. (2011). *Aquifer Classification Mapping in the Peace River Region for the Montney Water Project*. Victoria (BC): Geoscience B.C.
- Manga, M., Beresnev, I., Brodsky, E. E., Elkhoury, J. E., Elsworth, D., Ingebritsen, S. E., . . . Wang, C.-Y. (2012). Changes in permeability caused by transient stresses: Field observations, experiments and mechanisms. *Review of Geophysics*, 50, RG000382.
- Manning, M. & Reisinger, A. (2011). Broader perspectives for comparing different greenhouse gases. *Philosophical Transactions of the Royal Society*, 369(1943), 1891-1905.
- Martin, G. (2003). *Management of New Brunswick's Crown Forest*. Fredericton (NB): New Brunswick Department of Natural Resources.
- Matthews, H. D., Gillett, N. P., Stott, P. A., & Zickfeld, K. (2009). The proportionality of global warming to cumulative carbon emissions. *Nature*, 459, 829-832.
- Maule, A. L., Makey, C. M., Benson, E. B., Burrows, I. J., & Scammell, M. K. (2012). Disclosure of hydraulic fracturing fluid chemicals additives: Analysis of regulations. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 23(1), 167-187.
- McGarr, A., Simpson, D., & Seeber, L. (2002). 40 case histories of induced and triggered seismicity. *International Handbook of Earthquake and Engineering Seismology*, 81(A), 647-661.
- McKenzie, L. M., Witter, R. Z., Newman, L. S., & Adgate, J. L. (2012). Human health risk assessment of air emissions from development of unconventional natural gas resources. *Science of the Total Environment*, 424(1), 79-87.
- McLeod, R. (2011, July-August). \$and dollars – mining frac sand in the River Valley. *Big River Magazine*.
- Meyer, J. R., Parker, B. L., & Cherry, J. A. (2008). Detailed hydraulic head profiles as essential data for defining hydrogeologic units in layered fractured sedimentary rock. *Environmental Geology*, 56, 27-44.

- Mielke, E., Anadon, L. D., & Narayanamurti, V. (2010). *Water Consumption of Energy Resource Extraction, Processing, and Conversion, Discussion Paper #2010-15*. Cambridge (MA): Harvard Kennedy School Belfar Center for Science and International Affairs.
- Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-Being*. Washington (DC): Island Press.
- Minister of Justice. (2012). *Canadian Environmental Assessment Act*. Ottawa (ON): Government of Canada.
- Minister of Justice. (2013). *Hazardous Materials Information Review Act*. Ottawa (ON): Government of Canada.
- MIT (Massachusetts Institute of Technology). (2011). *The Future of Natural Gas*. Cambridge (MA): MIT.
- Moffet, J., Bregha, F., & Middelkoop, M. J. (2004). Responsible Care: A Case Study of a Voluntary Environmental Initiative. In K. Webb, *Voluntary Codes*. Ottawa (ON): Carleton Research Unit for Innovation, Science and Environment.
- Molofsky, L. J., Connor, J. A., Farhat, S. K., Wylie, A., & Wagner, T. (2011). Methane in Pennsylvania water wells unrelated to Marcellus Shale fracturing. *Oil and Gas Journal*, 109, 54-67.
- Molofsky, L. J., Connor, J. A., Wylie, A. S., Wagner, T., & Farhat, S. K. (2013). Evaluation of methane sources in groundwater in northeastern Pennsylvania. *Groundwater*, 51(3), 333-349.
- Muehlenbachs, K. (2012a). *Using Stable Isotope Geochemistry to Fingerprint Fugitive Gases from Hydraulically Fractured Wells*. Paper presented at Hydraulic Fracture Stimulation: Science, Society & Environment, Canadian Society of Petroleum Geologists' Gussow Conference, Banff (AB).
- Muehlenbachs, K. (2012b). *Identifying the Sources of Fugitive Methane Associated with Shale Gas Development, Updated with New Data, Jan 2012*. Paper presented at Resource for the Future. Managing the Risks of Shale gas: Identifying a Pathway Toward Responsible Development, Washington (DC).
- Mueller, D. & Eid, R. (2006). *Characterizing Early-Stage Physical Properties, Mechanical Behavior of Cement Designs*. Paper presented at Drilling Conference, Miami Beach (FL).
- Mufson, S. (2012, February 1). Cheap Natural Gas Jumbles Energy Markets, Stirs Fears it Could Inhibit Renewables, *Washington Post*.
- Myers, T. (2012). Potential contaminant pathways from hydraulically fractured shale to aquifers. *Groundwater*, 50(6), 872-882.
- NEB (National Energy Board). (2009a). *A Primer for Understanding Canadian Shale Gas*. Calgary (AB): NEB.
- NEB (National Energy Board). (2009b). *Energy Brief – Understanding Canadian Shale Gas*. Calgary (AB): NEB.

- NEB (National Energy Board). (2011). *Canadian Energy Overview 2010*. Calgary (AB): NEB.
- NEB (National Energy Board). (2012). Energy Trade - Energy Facts. Retrieved January 2014, from <http://www.neb-one.gc.ca/clf-nsi/rnrgynfimt/nrgrprtr/nrgdmnd/nrgytrdfct2011/nrgtrdfct-eng.html>.
- NEB (National Energy Board). (2013a). *Filing Requirements for Onshore Drilling Operations Involving Hydraulic Fracturing*. Calgary (AB): NEB.
- NEB (National Energy Board). (2013b). Marketable Natural Gas Production in Canada. Retrieved February 2013, from <http://www.neb-one.gc.ca/clf-nsi/rnrgynfimt/sttstc/mrktblntrlrgsprdctn/mrktblntrlrgsprdctn-eng.html>.
- NETL (National Energy Technology Laboratory). (2010). *Improving Thermal Efficiency of Power Plants. Technical Workshop Report*. Baltimore (MD): U.S. Department of Energy.
- Neuzil, C. E. (1986). Groundwater flow in low-permeability environments. *Water Resources Research*, 22(8), 1163-1195.
- Neuzil, C. E. (1994). How permeable are clays and shales? *Water Resources Research*, 30(2), 145-150.
- Nicholson, C. & Wesson, R. L. (1990). *Earthquake Hazard Associated with Deep Well Injection. A Report to the U.S. Environmental Protection Agency*. Denver (CO): U.S. Geological Survey and U.S. Department of the Interior.
- Nielsen, A. (2012). *We Gambled Everything: The Life and Times of an Oilman*. Edmonton (AB): The University of Alberta Press.
- NIOSH (National Institute for Occupational Safety and Health). (2002). *Health Effects of Occupational Exposure to Respirable Crystalline Silica*. Cincinnati (OH): Department of Health and Human Services, Centers for Disease Control and Prevention, NIOSH.
- Northrup, J. M. & Wittermyer, G. (2013a). Characterising the impacts of emerging energy development on wildlife, with an eye towards mitigation. *Ecology Letters*, 16(1), 112-125. doi: 10.1111/ele.12009.
- Nova Scotia. (2011). *Review of Hydraulic Fracturing in Nova Scotia*. Halifax (NS): Government of Nova Scotia.
- Nova Scotia Department of Natural Resources. (2008). *State of the Forest Report 1995-2005*. Halifax (NS): Nova Scotia Department of Natural Resources.
- NRC (National Research Council). (2010). *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*. Washington (DC): NRC.
- NRC (National Research Council). (2012). *Induced Seismicity Potential in Energy Technologies*. Washington (DC): NRC.
- NRCan (Natural Resources Canada). (2009). *Demonstrating Carbon Capture and Storage in Canada*. NRCan.
- NYSDEC (New York State Department of Environmental Conservation). (1999). *An Investigation of Naturally Occurring Radioactive Materials (NORM) in Oil and Gas Wells in New York State*. Albany (NY): NYSDEC.

- NYSDEC (New York State Department of Environmental Conservation). (2011). *Revised Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program*. Albany (NY): NYSDEC.
- O'Sullivan, F. & Paltsev, S. (2012). Shale gas production: Potential versus actual greenhouse gas emissions. *Environmental Research Letters*, 7(4). doi: doi:10.1088/1748-9326/7/4/044030.
- OCMOH (Office of the Chief Medical Officer of Health). (2012). *Chief Medical Officer of Health's Recommendations Concerning Shale Gas Development in New Brunswick*. Fredericton (NB): New Brunswick Department of Health.
- Ordonez, I. (2012). Oil Companies Drawn to 'Frac Sand'. Retrieved July 2013, from http://www.rigzone.com/news/oil_gas/a/117839/Oil_Companies_Drawn_To_Frac_Sand.
- Oreskes, N. & Belitz, K. (2001). Philosophical Issues in Model Assessment. In M. G. Anderson & P. D. Bates, *Model Validation: Perspectives in Hydrological Science*. London, United Kingdom: John Wiley and Sons Ltd.
- Oreskes, N. (2011). Working with Uncertainty: 'Unitisation and Renegotiation' as a Model for Science and Environmental Policy. In J. Lentsch & P. Weingart, *The Politics of Science Advice: Institutional Design for Quality Assurance*. Cambridge, United Kingdom: Cambridge University Press.
- Osborn, S. G. & McIntosh, J. C. (2010). Chemical and isotopic tracers of the contribution of microbial gas in Devonian organic-rich shales and reservoir sandstones, northern Appalachian Basin. *Applied Geochemistry*, 25, 456-471.
- Osborn, S. G., Vengosh, A., Warner, N. R., & Jackson, R. B. (2011). Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing. *Proceedings National Academy of Science*, 108, 8172-8176. doi: 10.1073/pnas.1100682108.
- OSHA (Occupational Safety and Health Administration) & NIOSH (National Institute for Occupational Safety and Health). (2012). *Hazard Alert. Worker Exposure to Silica During Hydraulic Fracturing*. OSHA & NIOSH.
- PA DEP (Pennsylvania Department of Environmental Protection). (2012a). Emissions and Source Reporting Requirements for Natural Gas Operations. Retrieved March 2012, from <http://www.pabulletin.com/secure/data/vol42/42-52/2535.html>.
- PA DEP (Pennsylvania Department of Environmental Protection). (2012b). *Long-Term Ambient Air Monitoring Project Near Permanent Marcellus Shale Gas Facilities Protocol*. Harrisburg (PA): Commonwealth of Pennsylvania Department of Environmental Protection.
- Pankow, J. F., & Cherry, J. A. (1996). *Dense Chlorinated Solvents and Other DNAPLs in Groundwater: History, Behavior, and Remediation*. Portland (OR): Waterloo Press.

- Patton, F. D. & Smith, H. R. (1988). Designs Considerations and the Quality of Data from Multiple Level Ground-Water Monitoring Wells. In A. G. Collins & A. I. Johnson, *Ground-Water Contamination: Field Methods. ASTM STP 963*. Philadelphia (PA): American Society for Testing and Materials.
- Pembina Institute. (2012). *Shale Gas in Canada. Background Document for the Pembina Institute Thought Leaders Forum. Towards Responsible Shale Gas Development in Canada: Opportunities & Challenges*. Pembina Institute.
- PennEnergy Editorial Staff. (2013, January 11). Halliburton using clean-burning natural gas to power fracking fleet, *PennEnergy*.
- Pennsylvania Office of the Governor. (2012). Governor Corbett Signs Historic Marcellus Shale Law. Retrieved May 2013, from <http://www.pikepa.org/Planning/Marcellus/Governor%20Corbett%20Signs%20Historic%20Marcellus%20Shale%20Law.pdf>.
- Perry, S. L. (2013). Using ethnography to monitor the community health implications of onshore unconventional oil and gas developments: Examples from Pennsylvania's Marcellus Shale. *New Solutions: A Journal of Environmental and Occupational Health Policy*, 23(1), 33-53.
- Petron, G., Frost, G., Miller, B. T., Hirsch, A. I., Montzka, S. A., Karion, A., . . . Hall, B. (2012). Hydrocarbon emissions characterization in the Colorado Front Range – a pilot study. *Journal of Geophysical Research: Atmospheres* 117(D4), D04 304. doi: 10.1029/2011JD016360.
- Pinti, D. L., Barnetche, D., Larocque, M., Valadez, A., Boucher, C., Retailleau, S., . . . Gélinas, Y. (2013). *4He and 222Rn in shallow aquifers as potential indicators of fluid migration in shale gas exploration areas: St. Lawrence Lowlands (Québec, Canada)*. Paper presented at GéoMontréal, Montréal (QC).
- Pochon, A., Tripet, J.-P., Kozel, R. M., B., Sinreich, M., & Zwahlen, F. (2008). Groundwater protection in fractured media: A vulnerability-based approach for delineating protection zones in Switzerland. *Hydrogeology Journal*, 16(7), 1267-1281. doi: 10.1007/s10040-008-0323-0.
- Porter, M. E. & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 2006, 78-92.
- Precht, P. & Dempster, D. (2012). *Jurisdictional Review of Hydraulic Fracturing Regulation*. Halifax (NS): Nova Scotia Department of Energy and Nova Scotia Environment.
- Province of British Columbia. (2012). B.C. Regulation 282/2010. Oil and Gas Activities Act. Drilling and Production Regulation. Retrieved January 2014, from http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/282_2010.

- Pruess, K., Oldenburg, C., & Moridis, G. (1999). *TOUGH2 User's Guide, Version 2*. Berkeley (CA): Earth Sciences Division, Lawrence Berkeley National Laboratory, University of California.
- Pruess, K. (2005). *ECO2N: A TOUGH2 Fluid Property Module for Mixtures of Water, NaCl and CO₂*. Berkeley (CA): Earth Sciences Division, Lawrence Berkeley National Laboratory, University of California.
- PSAC (Petroleum Services Association of Canada). (2013). *Media Release: Petroleum Services Association of Canada (PSAC) Reaching Out To Public About Hydraulic Fracturing* Calgary. (AB): PSAC.
- Public Health Agency of Canada. (2011). What Determines Health? Retrieved March 2013, from <http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php>.
- PwC (PricewaterhouseCoopers LLP). (2011). *Shale Gas. A Renaissance in U.S. Manufacturing?* PwC.
- Raleigh, C. B., Healy, J. H., & Bredehoeft, J. D. (1976). An Experiment in earthquake control at Rangely, Colorado. *Science*, 191(4233), 1230-1237.
- Ramudo, A. & Murphy, S. (2010). *Hydraulic Fracturing – Effects on Water Quality*. Ithica (NY): Cornell University.
- Raven, K. G., Novakowski, K. S., Yager, R. M., & Heystee, R. J. (1992). Supernormal fluid pressures in sedimentary rocks of southern Ontario – western New York State. *Canadian Geotechnical Journal*, 29, 80-93.
- République Française. (2013). L'exploitation et l'exploration des gaz de schiste définitivement interdites. Retrieved January 2014, from <http://www.gouvernement.fr/gouvernement/en-direct-des-ministeres/fracturation-hydraulique-l-exploitation-et-l-exploration-des-g>.
- Resnikoff, M. (2012). *Radon in Natural Gas from Marcellus Shale*. New York (NY): Submission to the New York State Department of Environmental Conservation.
- Rich, A. L. & Crosby, E. C. (2013). Analysis of reserve pit sludge from unconventional natural gas hydraulic fracturing and drilling operations for the presence of technologically enhanced naturally occurring radioactive material (TENORM). *New Solutions: A Journal of Environmental and Occupational Health Policy*, 23(1), 117-135. doi: 10.2190/NS.23.1.h.
- Richardson, B. (2013). Natural Gas Is Bridge from Oil to Renewables. Bloomberg TV. Retrieved July 2013, from <http://www.youtube.com/watch?v=Br9BPVcrFo>.
- Rivard, C., Molson, J., Soeder, D. J., Johnson, E. G., Grasby, S., Wang, B., & Rivera, A. (2012). *A Review of the November 24–25, 2011 Shale Gas Workshop, Calgary, Alberta – 2. Groundwater Resources. Open File 7096*. Natural Resources Canada.
- Robinson, A. L. (2012). *Air Pollutant Emissions from Shale Gas Development and Production*. Pittsburgh (PA): Carnegie Mellon University.

- Rokosh, C. D., Lyster, S., Anderson, S. D. A., Beaton, A. P., Berhane, H., Brazzoni, T.,... Pawlowicz, J. G. (2012). *Summary of Alberta's Shale- and Siltstone-Hosted Hydrocarbon Resource Potential*. Calgary (AB): AER.
- Roy, J. W. & Ryan, M. C. (2013). Effects of unconventional gas development on groundwater: A call for total dissolved gas pressure field measurements. *Groundwater*, 51(4), 480-482.
- Royte, E. (2012, November 28). Fracking Our Food Supply, *The Nation*.
- RSI (Risk Sciences International). (2012). *An Assessment of the Lung Cancer Risk Associated with the Presence of Radon in Natural Gas Used for Cooking in Homes in New York State*. Ottawa (ON): RSI.
- Ruth, J. H. (1986). Odor thresholds and irritation levels of several chemical substances: A review. *American Industrial Hygiene Association Journal*, 47(3), A142-A151
- Ryder Scott Company Petroleum Consultants. (2008). *Appendix A: Resource Potential Horton Bluff Formation, Windsor Basin*. Calgary (AB): Ryder Scott Company Petroleum Consultants.
- Saba, T. & Orzechowski, M. (2011). Lack of data to support a relationship between methane contamination of drinking water wells and hydraulic fracturing. *Proceeding of the National Academy of Sciences*, 108(37). doi: 10.1073/pnas.1108435108.
- Saiers, J. E. & Barth, E. (2012). Potential contaminant pathways from hydraulically fractured shale aquifers. *Ground Water*, 50(6), 826-828.
- Schirmer, M., Butler, B. J., Church, C. D., Barker, J. F., & Nadarajah, N. (2003). Laboratory evidence of MTBE biodegradation in Borden aquifer material. *Journal of Contaminant Hydrology*, 3-4, 229-249.
- Schon, S. C. (2011). Hydraulic fracturing not responsible for methane migration. *Proceeding of the National Academy of Sciences*, 108(37), E664.
- Schrag, D. P. (2012). Is shale gas good for climate change? *Daedalus*, 41(2), 72-80.
- SEAB (Secretary of Energy Advisory Board). (2011a). *Shale Gas Production Subcommittee Second Ninety Day Report*. Washington (DC): U.S. Department of Energy.
- SEAB (Secretary of Energy Advisory Board). (2011b). *Shale Gas Production Subcommittee 90-Day Report*. Washington (DC): U.S. Department of Energy.
- Séjourné, S., Lefebvre, R., Lavoie, D., & Malet, X. (2013). *Geologic and Hydrogeologic Understanding of Caprock Strata Overlying the Utica Shale in the St. Lawrence Lowlands (Quebec, Canada)*. Paper presented at GéoMontréal 2013, Montreal (QC).
- Sethi, S. P. (1979). A conceptual framework for environmental analysis of social issues and evaluation of business response pattern. *Academy of Management Review*, 4(1), 63-74.
- Shih, T., Rong, Y., Harmon, T., & Suffet, M. (2004). Evaluation of the impact of fuel hydrocarbons and oxygenates on groundwater resources. *Environmental Science and Technology*, 38(1), 42-48.

- Shindler, B. & Toman, E. (2003). Fuel reduction strategies in forest communities: A longitudinal analysis. *Journal of Forestry*, 101(6), 8-14.
- Shindler, B. A., Brunson, M. W., & Stankey, G. H. (2002). *Social Acceptability of Forest Conditions and Management Practices: A Problem Analysis*. Portland (OR): U.S. Department of Agriculture Pacific Northwest Research Station.
- Shipley, A., Hampson, A., Hedman, B., Garland, P., & Bautista, P. (2008). *Combined Heat and Power*. Oak Ridge (TN): Oak Ridge National Laboratory.
- Siemens. (2013). Siemens to Build a Turnkey Combined Cycle Power Plant in the Philippines. Retrieved January 2014, from <http://www.siemens.com/press/en/pressrelease/?press=/en/pressrelease/2013/energy/power-generation/ep201312015.htm>
- Sierra Research Inc. (2011). *Screening Health Risk Assessment Sublette County, Wyoming*. Sacramento (CA): Sublette County Commissioners, Wyoming Department of Environmental Quality and Wyoming Department of Health.
- Slonecker, E. T., Milheim, L. E., Roig-Silva, C. M., Malizia, A. R., Marr, D. A., & Fisher, G. B. (2012). *Landscape Consequences of Natural Gas Extraction in Bradford and Washington Counties, Pennsylvania, 2004–2010*. Reston (VA): U.S. Geological Survey.
- Soeder, D. J. (1988). Porosity and permeability of eastern devonian gas shale. *Society of Petroleum Engineers*, 116-124.
- Staaf, E. (2012). *Risky Business: An Analysis of Marcellus Shale Gas Drilling Violations in Pennsylvania 2008–2011*. Pittsburgh (PA): PennEnvironment Research and Policy Center.
- Stark, M., Allingham, R., Calder, J., Lennartz-Walker, T., Wai, K., Thompson, P., & Zhao, S. (2012). *Water and Shale Gas Development*. Accenture Consulting.
- Statistics Canada, (2012). *Canada Year Book 2010*. Ottawa (ON): Statistics Canada.
- Steinzor N, Subra W, & L., S. (2013). Investigating links between shale gas development and health impacts through a community survey project in Pennsylvania. *New Solutions*, 23(1), 55-83. doi: doi: 10.2190/NS.23.1.e.
- Subra, W. (2009). *Results of Health Survey of Current and Former DISH/Clark, Texas Residents*. New Iberia (LA): Earthworks.
- Supreme Court of Canada. (1997). *Delgamuukw v. British Columbia No. 23799*. Ottawa (ON): Supreme Court of Canada
- Supreme Court of Canada. (1999). *Ryan v. Victoria. File No. 25704*. Ottawa (ON): Supreme Court of Canada
- Supreme Court of Canada. (2004). *Haida Nation v. British Columbia (Minster of Forests). File No. 29419*. Ottawa (ON): Supreme Court of Canada
- The Canadian Press. (2011). N.B. Environment Minister Apologizes to Group. Retrieved January 2014, from <http://atlantic.ctvnews.ca/n-b-environment-minister-apologizes-to-group-1.688196>.

- The Royal Society and Royal Academy of Engineering. (2012). *Shale Gas Extraction in the U.K.: A Review of Hydraulic Fracturing*. London, United Kingdom: The Royal Society and The Royal Academy of Engineering.
- Tilley, B. & Muehlenbachs, K. (2011). *Fingerprinting of Gas Contaminating Groundwater and Soil in a Petroliferous Region, Alberta, Canada*. Paper presented at International Network of Environmental Forensics Conference, Cambridge, United Kingdom.
- Tilley, B. & Muehlenbachs, K. (2013). Isotope reversals and universal stages and trends of gas maturation in sealed, self-contained petroleum systems. *Chemical Geology*, 339, 194-204.
- Tollefson, J. (2013a). Nature News: Methane leaks erode green credentials of natural gas. *Nature*, 493(7430), 12.
- Tollefson, J. (2013b). Methane leaks erode green credentials of natural gas. *Nature*, 493(12).
- Topolnyski, T. N., Lemke, C. P., & Ikeda, T. J. (2009). *Frederick Brook Shale Gas Study. Sussex/Elgin Sub-Basins*. Calgary (AB): Corridor Resources Inc.
- Triangle Petroleum. (2009). *Corporate Profile 2009*. Calgary (AB): Triangle Petroleum.
- Turner, N. J., Gregory, R., Brooks, C., Failing, L., & Satterfield, T. (2008). From invisibility to transparency: Identifying the implications. *Ecology and Society*, 13(2), 7.
- U.K. Parliament. (1996). *Offshore Installations and Wells (Design and Construction, etc) Regulations 1996*. London, United Kingdom.
- U.S. GAO (United States Government Accountability Office). (2012a). *Unconventional Oil and Gas Development. Key Environmental and Public Health Requirements*. Washington (DC): GAO.
- U.S. GAO (United States Government Accountability Office). (2012b). *Information on Shale Resources, Development, and Environmental and Public Health Risks*. Washington (DC): GAO.
- U.S. House of Representatives Committee of Energy and Commerce. (2011). *Chemicals Used in Hydraulic Fracturing*. Washington (DC): U.S. House of Representatives Committee of Energy and Commerce.
- Unger, A. J. A., Sudicky, E. A., & Forsyth, P. A. (1995). Mechanisms controlling vacuum extraction coupled with air sparging for remediation of heterogeneous formations contaminated by dense nonaqueous phase liquids. *Water Resources Research*, 31(8), 1913-1915. doi: 10.1029/95WR00172.
- URS. (2012). *Revised Attachment 3: Gas Well Completion Emissions Data. Submitted as part of ANGA & AXPC. (2012). ANGA Comments to EPA on New Source Performance Standards for Hazardous Air Pollutants Review America's Natural Gas Alliance*. Washington (DC): ANGA and AXPC.
- USGS (United States Geological Survey). (2006). *Methane in West Virginia Ground Water*. USGS.

- Van Stempvoort, D., Maathuis, H., aworski, E., Mayer, B., & Rich, K. (2005). Oxidation of fugitive methane in ground water linked to bacterial sulfate reduction. *Groundwater*, 43(2), 187-199. doi: 10.1111/j.1745-6584.2005.0005.x.
- Van Stempvoort, D. & Roy, J. W. (2011). *Potential Impacts of Natural Gas Production on Groundwater Quality in Canada and Related Research Needs*. Ottawa (ON): Environment Canada.
- Vaughn, S. (2012). *Report of the Commissioner of the Environment and Sustainable Development*. Ottawa (ON): Office of the Auditor General of Canada.
- Vengosh, A., Warner, N., Jackson, R., & Darrah, T. (2013). The effects of shale gas exploration and hydraulic fracturing on the quality of water resources in the United States. *Procedia Earth and Planetary Science*, 7(2), 863-866.
- Venkatesh, A., Jaramillo, P., Griffin, W. M., & Matthews, H. S. (2011). Uncertainty in life cycle greenhouse gas emissions from United States natural gas end-uses and its effects on policy. *Environmental Science and Technology*, 45(19), 8182-8189. doi: 10.1021/es200930h.
- Vidic, R., Brantley, S. L., Vandenbossche, J. M., Yoxtheimer, D., & Abad, J. D. (2013). Impact of shale gas development on regional water quality. *Science*, 340(6134), 1235009.
- Walsh, W., Adams, C., Kerr, B., & Korol, J. (2006). *Regional "Shale Gas" Potential of the Triassic Doig and Montney Formations, Northeastern British Columbia*. Victoria (BC): British Columbia Ministry of Energy, Mines and Petroleum Resources.
- Wang, B. (2013a). *A Hypothetical Geomechanics Model for Qualitative Assessment of Environmental Impact of Shale Gas Fracking – Part I: Potential Effect on Goundwater*. Paper presented at GéoMontréal 2013, Montréal (QC).
- Wang, B. (2013b). *A Hypothetical Geomechanics Model for Qualitative Assessment of Environmental Impact of Shale Gas Fracking – Part II: Implication for Induced Seismicity*. Paper presented at GéoMontréal 2013, Montréal (QC).
- Warner, N. R., Jackson, R. B., Darrah, T. H., Osborn, S. G., Down, A., Zhao, K., . . . Vengosh, A. (2012). Geochemical evidence for possible natural migration of Marcellus Formation brine to shallow aquifers in Pennsylvania. *Proceeding of the National Academy of Sciences*, 109(30), 11961-11966.
- Warner, N. R., Christie, C. A., Jackson, R. B., & Vengosh, A. (2013). Impacts of shale gas wastewater disposal on water quality in western Pennsylvania. *Environmental Science and Technology*, 47(20), 11849-11857.
- Watson, M. (2003). *Environmental Impact Assessment and European Community Law*. Paper presented at XIV International Conference – Danube River of Cooperation, Belgrade, Serbia.
- Watson, T. L. (2004). *Surface Casting Vent Flow Repair – A Process*. Paper presented at 5th Canadian International Petroleum Conference, Calgary (AB).

- Watson, T. L. & Bachu, S. (2009). Evaluation of the potential for gas and CO₂ leakage along wellbores. *SPE Drilling & Completion Journal* 24(1), 115-126.
- Webb, K. (2004). Understanding Voluntary Codes. In K. Webb, *Voluntary Codes: Private Governance, the Public Interest, and Innovation*. Ottawa (ON): Carleton Research Unit for Innovation, Science and Environment.
- Weber, C. L. & Clavin, C. (2012). Life cycle carbon footprint of shale gas: Review of evidence and implications. *Environmental Science and Technology*, 46(11), 5688-5695.
- Whitaker, M., Heath, G. A., O'Donoghue, P., & Vorum, M. (2012). Life Cycle Greenhouse Gas Emissions of Coal-Fired Electricity Generation. *Journal of Industrial Ecology*, 16(51), S53-S72.
- WHO (World Health Organization). (1946). *Constitution of the World Health Organization*. Vol. 36. Copenhagen, Denmark: WHO.
- WHO (World Health Organization). (2009). *Milestones in Health Promotion. Statements from Global Conferences*. Geneva, Switzerland: WHO.
- Wigley, T. M. L. (2011). Coal to gas: The influence of methane leakage. *Climatic Change*, 108, 601-608. doi: <http://dx.doi.org/10.1007/s10584-011-0217-3>.
- Williams, H. F. L., Havens, D. L., Banks, K. E., & Wachal, D. J. (2008). Field-based monitoring of sediment runoff from natural gas well sites in Denton County, Texas, USA. *Environmental Geology*, 55, 1463-1471.
- Wilson, J. M. & VanBriesen, J. (2012). Oil and gas produced water management and surface drinking water sources in Pennsylvania. *Environmental Practice*, 14(4), 288-300. doi:10.1017/S1466046612000427.
- Wilson, S., Subra, W., & Sumi, L. (2013). *Reckless Endangerment While Fracking the Eagle Ford*. Washington (DC): Earthworks.
- Witter, R., Stinson, K., Sackett, H., Putter, S., Kinney, G., Teitelbaum, D., & Newman, L. (2008). *Potential Exposure-Related Human Health Effects of Oil and Gas Development: A Literature Review (2003–2008)*. Denver (CO): Colorado School of Public Health.
- Witter, R., McKenzie, L., Towle, M., Stinson, K., Scott, K., Newman, L., & Adgate, J. (2010). *Health Impact Assessment for Battlement Mesa, Garfield County Colorado*. Aurora (CO): Colorado School of Public Health, University of Colorado.
- Wolf Eagle Environmental. (2009). *Town of DISH, Texas. Ambient Air Monitoring Analysis*. Flower Mound (TX): Wolf Eagle Environmental.
- Worster, D. (1992). *Under Western Skies: Nature and History in the American West*. New York (NY): Oxford University Press.
- Wyoming Department of Environmental Quality. (2008). *Compliance Monitoring and Siting Requirements for Unlined Impoundments Receiving Coalbed Methane Produced Water*. Laramie (WY): Wyoming Department of Environmental Quality.

- Xu, T., Spycher, N., Sonnenthal, E., Zheng, L., & Pruess, K. (2012). *TOUGHREACT User's Guide: A Simulation Program for Non-isothermal Multiphase Reactive Transport in Variably Saturated Geologic Media, Version 2.0*. Berkeley (CA): Earth Sciences Division, Lawrence Berkeley National Laboratory.
- Young, O. R., King, L. A., & Schroeder, H. (2008). *Institutions and Environmental Change*. Cambridge (MA): MIT Press.
- Yoxtheimer, D. (2012). *Addressing the Environmental Risks from Shale Gas Development*. Washington (DC): Worldwatch Institute.
- Zeirman, R. (2013, June 21). Why Such Hysteria Over Fracking?, *Los Angeles Times*.
- Zhou, Q., Birkholzer, J. T., Mehnert, E., Lin, Y.-F., & Zhang, K. (2010). Modeling basin- and plume-scale processes of CO₂ storage for full-scale deployment. *Ground Water*, 48(4), 494-514.
- Zoback, M. (2010). *Reservoir Geomechanics*. Cambridge, United Kingdom: Cambridge University Press.
- Zoback, M., Kitasei, S., & Copithorne, B. (2010). *Addressing the Environmental Risks from Shale Gas Development*. Washington (DC): WorldWatch Institute.
- Zoback, M. (2012). Managing the seismic risk posed by wastewater disposal. *Earth Magazine*, 57(4), 38-44.