

The Health Effects and Other Hazards of Hydrofracking
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Presentation February 23, 2010 as part of
Natural Gas and Un-natural Consequences: the Health Risks of Fracking Chemicals

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- Draft SGEIS, 9/30/2009, New York DEC
- Hidden costs of Energy: Unpriced Consequences of Energy Production and Use, National Research
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- “Gas Attacks: The Surprising Link Between Natural Gas and Environmental Sensitivities and other
Illnesses,” David Wimberly, May 3, 1999
- “TEDX, Analysis of Chemicals Used in Fracturing,” 2/16/09
- “The Safety of Fracturing Fluids: A Quantitative Assessment,” Steve Coffman, August 4, 2009
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References for specific slides:

Slide 3 Precautionary principle

Recuerda, Miguel A. (2006) Risk and Reason in the European Union Law, 5 European Food and
Feed Law Review

Slides 4,5,6,7 Toxicology

“A Small Dose of Toxicology”

<http://www.asmalldoseof.org/toxicology/index.php>

Introduction to Toxicology

<http://www.med.howard.edu/pharmacology/handouts/INTRODUCTION%20TO%20TOXICOLOGY.ppt>.

Slide 9 Products

MODERN SHALE GAS DEVELOPMENT IN THE UNITED STATES: A PRIMER, US DOE,
April 2009

Draft SGEIS, 9/30/2009, New York DEC, Figure 5-3

Slide 13 Benzene (BTEX)

Hazardous Substances Data Base, Benzene

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~xgStaY:1>

Slide 14 Formaldehyde

Hazardous Substances Data Base, Formaldehyde

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~4FNX9R:1>

Slide 15 1,4-Dioxane/Hydrochloric acid

Hazardous Substances Data Base, 1,4-Dioxane

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~O0sBXC:1>

Hazardous Substances Data Base, Hydrochloric acid

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~U0IEYK:1>

Slide 16 Glutaraldehyde/Methanol

Hazardous Substances Data Base, Glutaraldehyde

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~GJG2hz:1>

Chronic Toxicity Summary – Glutaraldehyde,

http://oehha.ca.gov/air/chronic_rels/pdf/111308.pdf

Hazardous Substances Data Base, Methanol

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~6oFxBU:1>

Methanol Poisoning Overview

<http://www.antizol.com/mpoisono.htm>

Slide 17 2-Butoxyethanol

TOXICOLOGICAL PROFILE FOR 2-BUTOXYETHANOL AND 2-BUTOXYETHANOL ACETATE, ATSDR, August, 1998

<http://www.atsdr.cdc.gov/toxprofiles/tp118.pdf>

Glycol Ethers, EPA Air Toxics Web Site

<http://www.epa.gov/ttn/atw/hlthef/glycolet.html>

Hazardous Substances Data Base, 2-Butoxyethanol

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~k6UDfO:1>

Slide 18 Bromine-based biocides

Hazardous Substances Data Base, Bronopol, 2-bromo-2-nitro-1,3-propanediol

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~rP6PHE:1>

Hazardous Substances Data Base, 2,2-dibromo-3-nitrilopropionamide

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~eoPpCQ:1>

Wikipedia, Bronopol

<http://en.wikipedia.org/wiki/Bronopol>

Slide 22 4-Nitroquinoline-1-oxide

"4-Nitroquinoline 1-Oxide Forms 8-Hydroxydeoxyguanosine in Human Fibroblasts through Reactive Oxygen Species", [**Toxicological Sciences, Vol. 91, No. 2, pp. 382-392**](#)

<http://toxsci.oxfordjournals.org/cgi/content/full/91/2/382>

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<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~a5OIWQ:1>

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Slides 23, 24 What comes out of the ground – NORM

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Slides 25, 26, 27, 28

Earthworks, Air Contaminants

<http://www.earthworksaction.org/aircontaminants.cfm>

Health Effects of Ozone in the General Population, US EPA

<http://www.epa.gov/o3healthtraining/population.html>

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Alabama Cooperative Extension, Ozone Damage to Plants

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