Introduction to Environmental Health Issues

Natural Gas Development: A Public Health Concern
Water, Land, and Air Pathways

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2005 People’s Oil and Gas Summit: Toxics in Our Communities
Farmington, NM, October 28-29, 2005
ISSUES

• **Depletion of potable and arable water**
  – Competition for already marginal drinking and agricultural water supplies
  – Reduction in potable water quantity because of introduced contaminants

• **Downstream watershed impacts**
  – Increases in salinity, total dissolved solids, siltation, “selenity”, and other toxic trace elements released from underground

• **Release of toxic industrial chemicals into the ecosystem**
  – Exposure through water, air, and land
Photo: Colorado Environmental Coalition & EcoFlight
Depletion
Photos: San Juans Citizens Alliance; OGAP
Salinity

Source: US Dept. Interior
San Miguel County, Colorado
February 18, 2005
Assorted Toxic Chemicals

- 2-Butoxyethanol
- Acrolein
- Acrylamide
- Diethylene glycol monomethyl ether
- Ethoxylated nonylphenol
- Formamide
- Glutaraldehyde
- Methyl tert-butyl ether (MTBE)
- Naphthalene
- Polyglycerine methyl glucoside
- Styrene
- Tetramethylammonium chloride
- Toluene
- Xylene
Biocides

- 2-Bromo-2nitro-1,3-propanediol
- 2-Mercaptobenzothiazole
- 2-(Thiocyanomethylthio) benzothiazole
- Ethyl octynol
- Methylene bis(thiocyanate)

- Methylisothiocyantane (bdp)
- Chromium (several forms)
- Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2 thione
AIRBORNE COMPOUNDS OF CONCERN

- Aromatic naphtha
- Aromatic solvents
- Butanol
  [N-butyl alcohol]
- 2-Butoxy ethanol (2-BE)
- 2-ethylhexanol
- Benzene
- Ethylbenzene (Trimethylbenzene)
- Ethyl octanol
- Diesel 1 and 2
- Dust

- Glutaraldehyde
- Glycol ethers
- Isobutyl alcohol (2-methyl-1-propanol)
- Metallic and organic mercury
- Methyl tert-butyl ether (MTBE)
- Naphthalene
- PAHs
- Toluene
- Xylene
Bush taking aggressive measures to drill for oil

Local residents will no longer be consulted every time wells are proposed

Associated Press, MSNBC
October 18, 2005
Taking Action

• Need record of source and quantity of fresh water used for drilling
• Monitor quality and quantity of potable and arable water one year before breaking ground at the well pad at time of permitting
• Water quality monitoring continued on a regular basis throughout the life of the well
• Upon re-stimulation, sampling should commence again
Taking Action, continued

• Need public record of the complete recipe, including chemicals, injected at each fracing
• Air quality monitoring begun before drilling and continued throughout the life of the wells
• Air and water quality data provided to each homeowner in the area
• Promulgation of regulations for well pad storm water runoff
Work crews dodge steel pipe and steam at a Colorado coalbed methamphetamine drill site.