

Testimony of Daniel Thau Teitelbaum, M.D.  
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Good morning Chairman Waxman, Mr. Davis, and ladies and gentlemen of the Committee. Thank you for allowing me to express my concerns about the public health implications of oil and gas development on the Western Slope in Colorado and in New Mexico.

I am Daniel T. Teitelbaum, MD, a board certified occupational physician and medical toxicologist from Denver, Colorado. I am Adjunct Professor of Environmental Sciences at the Colorado School of Mines and Associate Clinical Professor of Preventive Medicine and Biometrics at the University of Colorado Health Sciences Center at Denver. For more than forty years I have practiced as an occupational toxicologist in Denver, and I have evaluated and treated many patients whose medical problems arose within industry and from the "side effects," of industry. I have watched with growing concern, the widespread development of the oil and gas industry in our State in the absence of any rational public health oversight of the consequences of this development, and of any resource for the evaluation and treatment of human illnesses that have arisen and will arise as a consequence of these activities.

The physical and environmental consequences of energy development are obvious. Large human and capital demands, heavy construction, mechanical resource extraction, traffic and other physical and environmental impacts are the rule. Air pollution and soil contamination, as well as ground, surface and potable water impacts are in principle, evaluated in environmental impact assessments. There is a web of laws to protect the integrity of the environment and to prevent some toxic exposures to humans from industrial activities. But, because exemptions have been granted to the oil and gas industry from some environmental laws and regulations that require them to identify and mitigate the impact of their activities on human health through air, water and soil contamination, toxic exposures can take place. Despite the extraction activity under way, the toxic impact on the human and animal populations of the resource areas is unevaluated. There is no public health oversight. There is no database of those exposed at work or as residents. No surveillance of the health impact of the activities on worker families, and other resident populations near the extraction and processing sites is underway or planned. No meaningful evaluation of exposure of these persons to such toxics as crude oil or its components, benzene, toluene, xylene, and naphthalene, of produced mercury or arsenic, of hydrogen sulfide (sour gas and its co-riders,) nor of MTBE, barites, or any other drilling chemicals used in the industry is done.

There have been documented health complaints by residents of the area. There are also anecdotal stories of medical problems in those exposed. Although it is likely that there are completed toxic exposure pathways to residents of the oil/gas extraction areas as defined by the Agency for Toxic Substances and Disease Registry, no investigation of exposure by any route is called for. Contaminated water sources, point emission sources, and soil contamination are not identified, nor is mitigation of contaminated sites required. Use of oil and gas toxics contaminated well water as domestic water sources leads to much larger exposures to volatile toxic hydrocarbons like benzene through shower water and by other routes than through the drinking water. Point source air contamination and

soil contamination with oil and gas and the extraction materials can lead to respiratory and dermal irritation, and to respiratory and dermal absorption of toxins and carcinogens.

Some of the natural components of oil and gas, and the chemicals formulated into extraction materials are allergens, respiratory irritants, neurotoxins, developmental and reproductive toxins and carcinogens. In past mineral extraction programs, the workers and area resident populations have suffered life threatening and even fatal outcomes as a result of fugitive emissions, abandoned recovery wastes, and air and water pollution. For example, mining tremolite asbestos contaminated vermiculite in Libby, Montana, impacted the entire town of Libby and beyond. Numerous cases of death and illness have occurred there. Extraction of Uranium at the Summitville Mine in Colorado and in Uravan, Colorado has caused serious environmental damage that threatens human health. The residues of lead, cadmium and arsenic left behind from smelting and refining in the Globeville neighborhood of Denver has impacted the area residents and the cleanup has cost large amounts of money. All of these environmental toxic impacts were ignored until well after the activity was underway. In some instances, nothing was done until the work had been abandoned. Had the hazards been recognized or anticipated earlier, the health and economic impacts would have been far smaller.

Preventable late consequences of oil and gas extraction must be undertaken now. The health consequences of oil and gas extraction must be identified, assessed and addressed. Measurement of point air exposures using saturation monitoring, assessment of local potable water supply contaminants and soil contamination evaluation must begin immediately. A database of those exposed must be assembled now, so that the ultimate outcome of the exposures they have undergone can be followed and secondary prevention can be undertaken. The ATSDR has undertaken registry activities for groundwater contaminant populations in other areas and with other toxic chemicals like benzene and trichloroethylene, and it follows the exposed populations. The ATSDR should immediately be directed to address the issues in the oil and gas regions on the Western Slope and to formulate an assessment and registry program. We cannot wait until years after the oil and gas extraction activities have taken a toll like that in Libby, or in Uravan or other places. We should identify the sources and nature of toxic exposures now from oil and gas development. We must close the loopholes in toxic exposures to residents of the oil and gas extraction areas, and identify and quantitate the pathways and extent of toxic exposure. The problem of widespread unidentified and unquantified toxic exposure to settled and mobile itinerant populations in the drilling fields of the Western Slope is obvious. The complete absence of a systematic approach to the identification of the exposures, and their quantification, and the establishment of a registry of the exposed persons so that exposure-outcome studies can be done, is a disgrace. The opportunity to do the studies is clear. The fact that neither government nor industry has undertaken these critical exposure/outcome health studies is inexcusable. When the bells are tolled for those injured, who will be willing to take the blame for these failures in preventive medicine.