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Testimony on Proposed Gas & Oil operations in S.E. Pennsylvania January 9, 2014
Carol J. Ward, Ardmore, PA 610-649-0465
Member- Sierra Club- S.E. PA

My name is Carol Ward. I am a retired reference librarian and library branch supervisor for the City of Philadelphia. I am also Vice President of a national non-profit dealing with chemical toxicity and health.

I have been concerned about hydraulic fracturing since I became aware that this process was starting in upstate Pennsylvania. There are many important considerations about fracking in an area as densely populated as the greater Philadelphia is. Also implied in any discussions of fracking is the human rights issue. Do natural gas companies have the right to threaten the rights of people to clean water and air?

I will touch on several issues: Damaged water supplies must be restored to a minimum safe drinking water standards.(Section 78.51) This has not always been done in upstate Pennsylvania and many have moved away from towns with severely polluted water. Many others have lost their health permanently, unable to leave their houses. People cannot live without reliable water Not only do they need this for drinking and cooking but also for bathing and laundry. The regulation for restoring and replacing safe drinking water supplies is Act 13 (the new Oil and Gas Act) This regulation provides that the replaced water should be at or above the standard of the previous water supply and not be watered down by changes.

A huge issue here is the proposal by natural gas companies to transport fracked waste water in barges down the Delaware River This is where safety is critical when you are dealing with the water supply of seventeen million people from the Delaware Water Gap to the state of Delaware. The problem is that once a river is breached by chemical spills from the waste water, how can it be restored to its former integrity? I don't believe that most people know about the hundreds of dangerous chemicals used in the fracking process. Let me enumerate just a few of them: Ethylene Glycol, Formaldehyde, Benzene, Arsenic, methane gas, barium, strontium. There are *radioactive* components in the fracked waste water, dislodged from the earth due to the depth of the drilling.

The chemist Theo Colborn analyzed the potential health effects of these chemicals- 75% of the chemicals could affect the skin, eyes, and the respiratory and gastrointestinal system. 40-50% could affect the nervous system and brain, immune , cardiovascular system and kidneys. 25% of these chemicals can cause Cancer and Mutations. . Colborn recommend that in order to protect public health, there must be full disclosure of the contents of all products, extensive air and water monitoring, and coordinated environmental human health studies. The U.S. Safe Drinking Water Act must be enforced I might add that one huge problem is that physicians, I believe, still are not free to disclose to their patients the chemicals that may have caused their injuries involving fluids from fracking.

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To address correspondence to Theo Colborn, you can write to her at TEDX, PO Box 1407, Paonia, CO 81428 U.S.A. ph: 970-527-4082. fax: 970-527-4082 Email: Colborn@tds.net

Residual waste disposal on roads and land from fracked waste water is not an acceptable use (Section 78.70) Byproducts of this disposal can pollute waterways and land much more strongly than other wastes. The proposed rules allow spreading of Brine from conventional wells on roads but not from Marcellus wells. At present, DEP regulations will not prevent contamination of soil, vegetation, and ground water, especially near drinking water sources, streams and rivers.

What about wastewater storage in open pits? (Section 78.56) Although DEP regulations allow this kind of storage, better methods should be used in order to avoid contamination. Laws have recently been passed in Illinois that hydraulic fracturing flowback and produced water should be stored in tanks above ground for temporary purposes. . Constant monitoring is required to avoid pollution of nearby streams.

Stray gas migration may be a problem in the proposed barge transport of fracked wastes. This has not been addressed by the proposed rules (Section 78.52A and Section 78.73) – other parts of Pennsylvania have experienced explosions from methane escaping from gas product wastes and storage sites. It's well to keep in mind the earthquake that occurred in Youngstown, Ohio which was related to fracked waste water storage. I imagine it is possible that once an area has had an earthquake, others could follow.

The exposure of large numbers of people in densely settled cities and towns in this area to an industrialized process like hydraulic fracturing is a risky one. Let us hope that those who carry this out here will be more skillful than those who played a part in the creation of the severely damaged 700 square miles of land in upstate Pennsylvania.

Respectfully Submitted