INTRO TO FRAC-SAND MINING

HYDRAULIC FRACTURING: a well stimulation technique in which underground rock layers are fractured (broken) by highly pressurized liquid made of water, sand, and chemicals in order to extract oil or gas. As a vital part of the full cycle of fossil fuel mining, frac sand is the propellant that holds the induced fractures open for the gas or oil to flow when the pressure is released. According to research from The FracTracker Alliance, the average horizontal shale gas well is currently using 4,100-5,800 tons with demand increasing by 3-4 tons per year as the wells are drilled longer.

WHY WORRY...

The essential frac sand is obtained by strip mining, which leaves behind a range of devastation from terse landscapes similar to mountaintop removal in the case of surface operations, to destruction of vital aquifers in the case of subsurface mines, and water contamination (e.g., Rockwood Quarry, Newport, NH). It is evident in the experience of Wisconsin and other states in which frac sand mining has already progressed, the list of health, safety, economic, and environmental problems caused is devastating.

To start mining operations before essential controls could be put in place for this entirely new industry, mining companies have financed propaganda campaigns that have overwhelmed townships and county officials lacking the knowledge of the industry required to make forethoughtful decisions on behalf of those they represent. As the frac sand mining industry proceeds without extreme tight control, the degradation it is causing could well extend other damages since while settlement, and the social fabric, tax burden, quality of life, and health in rural communities is being negatively impacted, perhaps for decades, if not forever.

WHAT CAN YOU DO?

The industry now wishes to move quickly, through a rapidly expanding network of towns and counties in the U.S. Midwest — the breadbasket of the world. Fortunately, informed and highly motivated citizens can prevent such landscape-removing atrocities. LAND-USE / ZONING ORDINANCES at the municipal or county level and state laws banning their power have been used successfully in many states to block sand mining and fracking-related activity.

Join local and regional groups, write letters to local media, educate your neighbors, voice your opposition to industrial frac sand mining can awaken and inspire elected officials at all levels, and combine them to use the legal tools at hand to block or restrict frac sand mining and other sand facilities.
No frac sand mine in heavily mined Wisconsin has ever been reclaimed or restored with natural or native vegetation.

**Health & Safety**

CANCER. Many Clinic doctors who have studied the impact of mining, trucking, and shipping silica sand by rail or long barge trains of its correlation with lung cancer. They have said, “If it’s silica sand, the dust is likely to be carcinogenic and leads directly to lung cancer.” Under any circumstances other than sand mining and related activities, silica dust is very highly regulated.

**Health Concerns for Silica in Outdoor Air**

**FROM COMMUNITIES AT RISK: FRAC SAND MINING**

**The Myth of Polyacrylamide Hydrogels**

**Drinking Water Contaminants**

**Health Concerns for Silica in Outdoor Air**

**ENVIRONMENTAL IMPACTS**

**DIMINISHING GROUNDWATER.** Mining and processing silica sand takes enormous quantities of surface water and groundwater, lowering water tables and reducing or eliminating the availability of water that is critical for scores of other purposes. In a period of drought across most of the U.S., this is an unacceptable use of precious water.

**Wildlife Habitat.** Mining eliminates entire landscapes that are the natural habitats of important populations of birds, mammals, reptiles, amphibians and other members of the food web on land, and a multitude of small creatures that live and make up the ecological integrity of surface waters. Some of these species are of high conservation concern.

**Outdoor Recreation.** Frac sand mining eliminates or severely degrades all forms of nature-centered recreation. This includes hiking, biking, birding, canoeing, fishing, cross-country, outdoor photography and opportunities for those who fish or hunt. Tourism is a big industry, but not near sand facilities.

**Heritage.** Native American burial sites, village sites, and numerous other valuable artifacts from the first residents and later immigrant residents will be destroyed if frac sand mining is allowed to take place whenever the mining corporations wish.

**Climate Change.** Frac sand is an essential part of natural gas and oil production, a major contributor to global warming via the potent greenhouse gas methane. A combination of leash and intentions to convert gas/oil production facilities adds emissions equivalent to 35 million additional automobiles each year.

**The Radical Approach**

To allow outside corporations to enrich themselves at the expense of local residents and leave behind nothing but a destroyed landscape and devastating economic, local, environmental, health, and quality-of-life problems.

**The Conservative Approach**

To preserve human and natural resources and enjoy the status quo and the quality of life it provides.

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**Economic Impacts**

**Jobs.** While the industry has promised jobs, very few local residents have secured a job associated with a frac sand mine. Any job is temporary in this boom-and-bust industry. Other local jobs have been lost to recreation, hospitality, and services now cut back.

**Highway Damage.** Semi’s hauling dense loads of frac sand from just one mine endangered a blacktop highway so severely, in just 8 weeks in Wisconsin, that the highway had to be rebuilt. Mines are typically expected to operate for 5-10 years, often longer.

**Home Values.** Home dropped in assessed values by $500 in just two years due to truck traffic hauling frac sand on a nearby highway. Worsens if a roadway is being torn up with the dust or toxic substances derived from the mine, the home value actually becomes zero.

**Truck Traffic.** Destructive semi traffic and speeding truck drivers not only destroy bridges and other transportation infrastructure, they are also a traffic hazard for school buses, commuters and general traffic.

**Loss of Tourism Economy.** Many areas with scenic vistas and a healthy environment receive huge economic benefits from tourism and second homes. These areas are at serious risk if frac sand mining takes place over the landscape.

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**Restrictions on Frac Sand Mining and Facilities**

There are a number of municipal and county land use ordinances controlling frac sand mining or facilities via zoning and overlay districts that establish clear restrictions on heavy truck road use, chemical use, prescribed processes, setbacks from communities or special geographic features — e.g., Allamakee Cty. Iowa. There have been a series of short-term municipal and county moratoriums which the study does not undertake — some being followed by ordinances, while others simply lapsed.

Efforts are underway to pass state laws ending local land use rights in Wisconsin, for one, contact your state legislators and educate them about the appropriateness and necessity of keeping local land use decision-making powers intact.
Silica Particles from Frac Sand Mining Put Tens of Thousands at Risk

HOW BIG IS THE “SAND”?

These particles are so light they can be carried a half mile or more in the air.

Beach sand is 30 – 50 x larger than Silica Dust.

As you can see, these are actual images from the U.S. Bureau of Mines of the very fine material used to make the tiny cores for drilling.

Air

Silica dust, when inhaled, can cause respiratory problems. It is carried by the wind and tracked into mines. The particles are very tiny and can travel a long way.

OSHA Fact Sheet for Crystalline Silica

The Economic Benefits and Costs of Frac Sand Mining

Drinking Water Contaminants

Drinking water contamination can be a serious problem. Frac sand mining can cause contamination of drinking water supplies. It is important to be aware of the potential dangers.

Based on Kate Prengaman, Wisconsin Center for Investigative Journalism, Source:

Graph Constructed from: USGS Information on Silica

Frac Sand Mining in WI

Total, the West Central Wisconsin region is producing

211,336 million silica sand tons annually

Graphs from:

- 13. Iowa Information on Silica
- 14. OSHA Fact Sheet for Crystalline Silica
- 15. Wisconsin Department of Transportation
- 16. Wisconsin Department of Natural Resources

Frac Sand Locations & Silic Conc

Frac Sand Locations & Silic Conc

Gas and oil drilling with hydraulic fracturing uses a lot of Frac Sand. The drilling (with exemptions to protective federal laws) causes air and water pollution, contaminants drinking water supplies, kills animals and plants, and poisons people and humans.

There are also other reasons the formation. Heavy metals such as the heavy metals and heavy metals go in the waste water. The waste water that is the waste products and that waste water will then go into the river. The river will then go into the Susquehanna River. The Susquehanna River is not being cleaned up, it's being left in a natural state.

The US EPA does not have tests for these chemicals, but puts the "safe" limit at 0.005 ppm concentration.

Based on Kate Prengaman, Wisconsin Center for Investigative Journalism, Source:

Questions for Communities to Ask & Answer Before Authorizing Frac-Sand Production

- Before allowing a new frac-sand mining operation to open in your community, what questions should you ask? What information are you entitled to?”
- "What will get the approval of the city or town’s planning or zoning board?”
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