

Winneshiek County Board of Supervisors
c/o Ben Steines County Auditor
201 W. Main St.
Decorah, IA 52101

Dear Sirs,

I have been asked to write you to clear up some issues about the public health risks of silica sand mining that is being proposed in your county. This request came from Bob and Linda Watson, who I understand are citizens within your county. I do not personally know them but am simply rendering my personal professional opinion and what my review of the literature says about the subject.

One issue relates to the safety of the silica when airborne. Any dust that comes off of a mine site represents a potential health risk. There currently are 6 states with standard for monitoring silica in the ambient air. These states all did their due diligence and concluded that a standard needed to be set. If silica exceeds 3 ug/m³ on average it can result long term in chronic silicosis which is an irreversible lung condition. It is known that when it exceeds even 0.27ug/m³ it increases cancer risk. The particles that are harmful are those below 4 microns in size and the finest dust may not be that visible to the naked eye. Anyone that says that the material inhaled is flushed out of their body is not correct when we are talking about these fine particles.

Another issue relates to the flocculant polyacrylamide. Though polyacrylamide itself is safe and is used in waste treatment facilities and on farm field application, its exposure to heat, sheer stress and sun exposure, as occurs in sand processing, can lead to its breakdown to acrylamide which is both a neurotoxin and a probable carcinogen. It is my opinion that acrylamide needs to be measured in the holding ponds on sand processing sites to verify that its concentration is low enough to not represent a risk to drinking water, if this pond were to ever discharge its contents. Acrylamide at a concentration of 0.5 parts per billion would make the aquifers water undrinkable. (Acrylamide the weight of a penny (2.5gm) would make 1 million gallons of water undrinkable) It does not take much.

We need the mining industry to realize these are risks and do everything possible to mitigate these risks when they mine. The best way to do this is through state wide regulation, since it is apparent that many mining industries representatives often do not even recognize these as risks.

I have a Minnesota Medicine article that is being published in the May 2013 issue on this topic with the references to support this information. Also the Environmental Quality Board of Minnesota and their 29 co-authors have an excellent publication that is a must read for everyone being faced by this issue.

<http://www.eqb.state.mn.us/documents/March%20Final%20Silica%20Sand%20Report%20for%20publication.pdf>

Regards,

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St Charles, MN