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November 12, 2013

Jeff Smyser
Principal Planner
Minnesota Environmental Quality Board
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silicasand.eqb@state.mn.us

Via electronic mail

In re: Model standards and criteria for silica sand mining and processing

Dear Mr. Smyser:

I am writing on behalf of the several thousand members of Minnesota Trout Unlimited to urge that the Environmental Quality Board develop the strongest possible model standards and criteria for the mining, processing, and transporting of silica sand in southeast Minnesota. This unique corner of the state contains world class trout fisheries which draw anglers from around the state, the region and nation. The following comments are directed to model standards and criteria for this unique corner of southeast Minnesota corresponding to the DNR's Paleozoic Plateau Ecological Section, and commonly referred to by trout anglers as the "Driftless area".

Specific standards and criteria listed in 116C.99 are not exhaustive.

The EQB has asked that comments be focused on the specific standards and criteria listed in Minnesota Statute 116C.99. The statute, however, does not limit the EQB's development of model standards and criteria to those which are specifically enumerated. While it is true that the EQB must include standards and criteria for listed areas, it may also develop additional model standards and criteria. Similarly, the list of features for which setbacks or buffers must be recommended is not, and is not intended to be, exhaustive or exclusive. The EQB can and should go beyond this list to recommend protective setbacks or buffers for other sensitive natural resource features. We believe it is critical that the EQB develop protective setbacks or buffers for sink holes, all springs (not just fens) and groundwater tables.

Models, not lowest common denominators.

The EQB should make clear that these are model minimums, not maximums, and advise local units of government that they can go beyond them as they consider community values. However, the EQB must be aware of the reality that citizens sitting on local boards will view

these as models, and not merely as representative of the lowest common denominator. There will be a strong tendency for local governments to view these models as maximums. Consequently, the EQB recommendations must advance true models. Likewise the EQB should acknowledge when local communities have taken pains to develop real models and incorporate these into its recommendations. The EQB should not propose any setback, standard or criteria as a model which is less restrictive than any existing local ordinance. To do otherwise would undercut the thoughtful work of the most engaged local communities, and provide fodder for project proposers to threaten local governments with legal challenges unless those standards are relaxed down to the level of the EQB “model” standards.

Horizontal setbacks from sensitive coldwater resource features.

In April 2013 the DNR testified in strong support of a uniform minimum setback for silica sand mining operations of one mile from all springs, trout streams and perennial tributaries of trout streams located in the Paleozoic Plateau Ecological Section. A majority of legislative leaders apparently did not support the immediate creation of a uniform minimum standard. This reluctance does not change the sound factual basis underpinning the DNR’s professional judgment. The DNR agrees that the appropriate and necessary setback is at least one mile from all springs, trout streams and perennial tributaries of trout streams in this unique area. We urge the EQB to support the DNR’s expert assessment in this matter and use this setback distance as the model standard it recommends.

The model setback must apply to all trout streams. From an ecological perspective it does not matter if one trout stream was designated a “designated trout stream” under DNR rule and another trout stream overlooked or otherwise not designated for social or political reasons. Both are trout streams which support public fisheries. Our members are aware of and fish for naturally reproducing wild trout on several de facto trout streams that have neither been designated as “designated trout streams” by the DNR, nor classified as Class 2A waters by the MPCA. These are coldwater fisheries nevertheless and the model standards must apply to them equally. To continue to ignore these trout streams, or any of the springs and tributaries which sustain them, would be arbitrary and unreasonable.

Likewise the model setback must apply to all springs and perennial tributaries of trout streams, not an arbitrary subset of them. The cold groundwater which issues from natural springs and seepage areas, and flows via perennial tributaries to trout streams, is the prerequisite need of these trout fisheries. The DNR testified in support of protecting all springs (not just calcareous fens) and all perennial tributaries of trout streams via a one mile setback. The locations where underground conduits bring cold groundwater into tributaries are not mapped, and thus the entire length of the perennial portion of tributaries, from the springs or groundwater seeps which give them their perennial flow, must be protected with the same setback. As a practical matter, the presence of year round flow in these perennial tributaries provides a roadmap to the location of these uninventoried or unmapped springs and seeps.

It is particularly important that the EQB recommend the uniform one mile setbacks, precisely because the legislative authorization for the DNR to develop a permitting process near designated trout streams obscures the DNR’s recommendation that no mining be permitted

within one mile of any spring, trout stream or perennial tributary of a trout stream. Local units of government are likely to ignore the need to adopt a one mile setback, under the mistaken belief that the DNR permitting process will eliminate all dangers. The DNR's professional judgment is that the minimum setback from all springs, trout streams and perennial tributaries of trout streams in the Paleozoic Plateau Ecological Section should be one mile. This message will be lost unless the EQB explicitly offers these setbacks as the appropriate model standard for local governments to adopt.

Vertical buffer from groundwater resources.

Minnesota Trout Unlimited and the DNR agree that the finite groundwater resources in southeast Minnesota should be protected from disruption, pollution and needless waste by requiring a vertical separation of 25 feet between the groundwater table and silica sand mining activities. This vertical buffer is necessary to prevent the alteration of subsurface flow patterns, prevent changes in the quality of groundwater, and avoid the unintended use or removal of groundwater through construction dewatering. We believe that this is an adequate buffer in most instances, provided that the one mile horizontal setback from springs, trout streams and perennial tributaries of trout streams is all adopted by local government units. However, if other geologists determine that a greater vertical setback is necessary in some instances, including where the one mile horizontal setback is not adopted, the EQB should recommend, and we will support, this greater vertical buffer as the model standard.

Since the groundwater table in some locations can actually be slightly pitched, we suggest that the standard be "25 feet from static water level as measured at the site."

Criterion for groundwater use.

A quantitative criterion for groundwater use is needed to prevent the needless wasting of millions of gallons of our finite reserves of pure drinking water. While some recharge of aquifers does occur in this area, studies indicate that "newer" water entering these aquifers is not as pure as the older water. It makes no sense to needlessly waste drinking water reserves simply to sort sand grains. Establishing as a model criterion that no more than 1 million gallons per year of groundwater can be used by any silica sand mining or processing facility will help conserve our precious groundwater for future generations. The DNR testified that this criterion is appropriate for silica sand mining and processing operations in the Paleozoic Plateau Ecological Section. The EQB must recommend it as the appropriate model.

The vertical buffer from the groundwater table for mining activity will largely ensure that the actual mining can meet this criterion. However, mine operators often prefer to sort or process sand on-site using pumped groundwater. We remain very concerned that, given our antiquated water appropriation law, the DNR will be successfully pressured to issue groundwater appropriation permits allowing water from these same aquifers to be pumped out for on-site or off-site processing facilities. Recent proposals indicate that some individuals and companies may be willing to target sand deposits with very low concentrations of the preferred grain sizes, because state law currently permits them to use vast amounts of groundwater merely to sort grain

sizes. For this reason all processing activities and facilities must also be required to meet this criterion.

Mining industry experts have indicated that in those areas in southeast Minnesota currently targeted for silica sand mining there are several alternatives to using groundwater, which will allow the mines to operate very profitably. Other readily available sources of water for processing include warm surface water, treated wastewater, and recycled water. However, state law has created a disincentive for businesses to use these alternatives. Until state water appropriation law is modernized or regulators adopt longer term thinking about groundwater sustainability, local criteria limiting groundwater use to 1 million gallons per year will be the best way to overcome the current disincentive for business to use readily available surface water or dry sorting processes.

Setback from all springs, not only from calcareous fens.

The list of features for which setbacks or buffers must be recommended by the EQB is not, and is not intended to be, exhaustive or exclusive. The EQB must go beyond this list to recommend protective setbacks for other sensitive natural resource features. One such feature which must be protected with a minimum setback are the natural springs which provide the cold groundwater essential for area streams to support coldwater fisheries. Without the stable base flow of cold groundwater southeast Minnesota trout fisheries will disappear. No cold groundwater; no trout. It is that basic. Limiting protective setbacks to just those springs which are part of a calcareous fen would leave unprotected the prerequisite need of trout fisheries. The DNR testified that a one mile setback from all springs in the Paleozoic Plateau Ecological Section is needed to protect these special resources. The EQB must incorporate this model setback.

Setback from sinkholes in this active karst region.

The Paleozoic Plateau is characterized by very active karst features, including sink holes which connect surface areas to groundwater. Sinkholes are a major means by which surface water seeps into the ground over a period of days, months, or years and recharges groundwater. This water often flows as underground streams, and pools between confining layers of rock or clay, forming underground reservoirs. Eventually some of this groundwater flows from cracks in the confining bedrock as natural springs and seepage areas. Due to the cooling effect of the earth it issues from springs and seeps at consistently cold temperatures. This cold water is the lifeblood of our trout streams. In order to preserve the uninterrupted recharge of groundwater and springs, the sinkholes must be protected from disturbance from mining activities. Research suggests that the model setback for silica sand mining and quarrying activity from sinkholes should be at least 1,000 feet. We urge the EQB to propose a model buffer from sinkholes which is at least this large.

Criterion for preserving the quality of groundwater.

A criterion is also needed to protect the quality, and not just the quantity, of groundwater affected by the mining, processing, and transportation of silica sand. The goal should be that these activities cause no adverse impact to the quality of groundwater. This criterion should be

applied to all use, recycling, appropriation and discharge (including as surface water) of groundwater, and be utilized in the development of other model standards.

Protecting public investments.

The preservation of the public investments in natural resources and water quality protection, restoration and enhancement must be an overarching criterion. The public has invested hundreds of millions of dollars to set aside sensitive lands in this unique landscape for the purpose of improving and protecting water quality and aquatic resources. The restoration and protection of the world class trout fisheries now established here has been a focal point of decades of effort. Protection of these investments must be the paramount criterion which informs the development of all model standards and criteria.

A large portion of that public investment has been the acquisition of land in fee title to be managed as state forest lands and the purchase of aquatic management easements along trout streams. The many natural resource benefits provided by these lands must be preserved by buffering them from silica sand mining and processing activities. Silica sand mines should not be permitted within one mile of any Aquatic Management Area easement, including any trout stream easement. Silica sand mining operations and silica sand processing facilities should not be permitted on State Forest lands, and an additional buffer should also recommended by the DNR.

The commonsense setbacks and criteria outlined above will preserve the world class trout fisheries found in southeast Minnesota and thousands of existing local jobs they support, and provide useful guidance to steer an emerging industry to locations which will not cause undue harm.

Thank you for considering this input.

Sincerely,

John P. Lenczewski