



Richard Harris <rharris@southhadley.ma.gov>

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## Fwd: Professional Opinion-

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**Neva Tolopko** <neva@tolopko.com>  
To: Richard Harris <rharris@southhadley.ma.gov>

Thu, Jan 3, 2019 at 2:42 PM

Hi Richard-

I reached out to a previous colleague , Dennis Newell: [http://www.usu.edu/geo/newell/Newell\\_Website/Home\\_files/Newell\\_CV.pdf](http://www.usu.edu/geo/newell/Newell_Website/Home_files/Newell_CV.pdf) , that is a geologist with contaminant transport modeling experience and asked if he would review the plans submitted by Chicopee Concrete and the USGS report by Garabedian and Stone titled, "Delineation of Areas Contributing Water to the Dry Brook Public-Supply Well, South Hadley, Massachusetts". I asked him to share any concern about the proposed excavation sites with respect to water quality, and aquifer recharge.

Please find his comments below and his note that this is his professional opinion, not that of his current employer (University of Utah). Please share this with the Planning Board, as it is another profession opinion that a more robust study should be performed before approving additional excavation in this area.

Best regards,

Neva Tolopko

Environmental Engineer, and South Hadley resident  
----- Forwarded message -----  
From: **Dennis Newell** <dennis.newell@usu.edu>  
Date: Wed, Jan 2, 2019 at 3:40 PM  
Subject: Re: Professional Opinion-  
To: Neva Tolopko <neva@tolopko.com>

Hi Neva -

Sure, you can use content from my email...just make sure it is clear it is just my personal professional opinion and not that of my Department or the University....

best regards,

Dennis

Dennis L. Newell  
Assistant Professor of Geology  
Department of Geology  
Utah State University  
[4505 Old Main Hill](#)  
[Logan, UT 84322](#)

435-797-0479----- Forwarded message -----  
From: **Dennis Newell** <dennis.newell@usu.edu>  
Date: Wed, Jan 2, 2019 at 9:24 AM

Subject: Re: Professional Opinion-  
To: Neva Tolopko <[neva@tolopko.com](mailto:neva@tolopko.com)>

Hi Neva -

Sorry for the delay in getting back to you....

I skimmed through the USGS report and looked at the location of the proposed excavations. Based on the MODFLOW simulations and what is known about the local hydrogeology, the new pits are within the recharge area of the well. Also, the pits are quite close to the well. Although the look "down stream" in terms of the river, I think the recharge area to the well under different pumping scenarios is not this simple.

It looks like there are some monitoring wells, existing and possibly proposed in the permits, but it does seem that a more robust and site-specific study is needed to properly site these wells.

I certainly would be worried about water quality impacts by excavation... beyond the obvious things like fuel spills, would this alter the turbidity of recharge, would more total dissolved solids enter the groundwater, etc...based on the existing study, this is not known.

Also, the geology changes pretty rapidly vertically and laterally...with the interbedded lake sediments and varve intervals. This will really impact how recharge behaves. Are there any confining units under the excavation locations, or is it just sand and gravel to the aquifer? This is something an improved model would need.

What is the travel time? This is important for gw monitoring...if there is a spill of some sort, or an degradation of water quality of the recharge, how sensitive will the monitoring program be to this?

Sorry for the sorta random collection of thoughts, but in short...there is enough uncertainty in the hydrogeology to warrant a site-specific study. This study should refine what is known about the subsurface geology and improve the modeling for the area to look more specifically at how the excavation area contributes to recharge - what percentage, travel times, overall impact of this water to aquifer water quality.

I hope this helps - let me know if you have any other questions.

Happy New Year!

DN

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