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Vishal Gupta, W. P. Johnson,\* P. Shafieian, H. Ryu, A. Alum, M. Abbaszadegan, S. A. Hubbs, and T. Rauch-Williams: Riverbank Filtration: Comparison of Pilot Scale Transport with Theory

In our introduction we considered the practical significance of microscopic particulate analysis (MPA) and the relevance of colloid filtration theory (CFT) to MPA, resulting in the statement that “The focus on larger particles by the MPA method runs counter to established theory regarding the removal of colloids during transport through porous media”. To clarify this statement in a regulatory context, a public drinking water supply well is classified as groundwater under the direct influence of surface water (GWUDI) if hydrogeologic data, well proximity to surface water, and microscopic MPA results warrant this designation. Thus, we wish to clarify that the MPA is not the sole factor considered in determining GWUDI status.

The MPA method focuses on *Cryptosporidium parvum* oocysts due to their resistance to inactivation by commonly used disinfectants (except UV); hence, coagulation and filtration are standard treatment for *Cryptosporidium* removal (but riverbank filtration is a potential alternative treatment). The MPA method considers a range of biological particles of varying sizes, but is empirical in nature. Effective targeting of appropriately sized biological particles based on theoretical and experimental observations would potentially improve MPA and any GWUDI determination that makes use of MPA. For example, 1  $\mu\text{m}$  diameter bacteria or bacterial spores might be found to be suitable regulatory surrogates for 5  $\mu\text{m}$  diameter *Cryptosporidium*. For this purpose, our manuscript evaluates transport of a range of biological particles of differing sizes and compares these results to expectations from theory.

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