



August 11, 2016

File No. 14-08015

Tina M. O'Rourke, Business Manager
Horsham Water & Sewer Authority
617 Horsham Road
Horsham, PA 19044

Reference: Navy Remedial Investigation of PFCs
Questions to address through USGS Model

Dear Ms. O'Rourke:

On behalf of the Horsham Water and Sewer Authority (HWSA), we appreciate the opportunity to provide the following questions pertaining to the USGS model being developed for the Navy as part of their investigation of perfluorinated compounds (PFCs) in groundwater. This letter updates the previous letter we provided pertaining to modeling, dated February 22, 2016. Essentially, our questions are the same, with exception that we have added reference to Wells 10, 17, and 21 to the discussion.

The USGS most recently discussed their modeling efforts at the technical meeting held at the Horsham Township building on July 27, 2016. We appreciate the fact that the potential for development of the USGS model to make predictions and assist with remedial efforts is vast. The questions below relate specifically to groundwater sources and facilities affected by HWSA. We request consideration of these questions as the model is developed, calibrated and utilized going forward.

In addition, we are sending under separate cover, water production and monitoring data for HWSA wells as discussed during the recent technical meeting. This data is provided for the sole purpose of modeling by USGS as part of their remedial investigation of PFCs in Horsham, PA.

Recommended modeling questions.

1. HWSA is currently planning to construct treatment systems at HWSA Wells 26 and 40 to remove PFCs detected in these wells. Would other remediation strategies, such as source treatment or groundwater containment, effectively remove PFCs from the affected groundwater, reduce the area affected, and ultimately eliminate the need for treatment of off-site wells?
2. HWSA Wells 26 and 40 have been out of service since detection of PFC's above the EPA provisional Health Advisory Level in August 2014. Wells 10, 17, and 21 were taken out of service in May 2016. What effect will returning these wells to service have on groundwater flows and PFC concentrations?
3. Many HWSA wells currently operate at less than permitted capacity. If pumping is increased in one or more wells to their permitted capacity, how could this affect groundwater flow and PFC

BUILDING ON A FOUNDATION OF EXCELLENCE

65 E. Butler Avenue | Suite 100 | New Britain, PA 18901 | Phone: 215-345-4330 | Fax: 215-345-8606
www.gilmore-assoc.com

concentrations in area public or private wells?

4. HWSA's Park Creek Sewage Treatment Plant (PCSTP) has been receiving flow from wells known to contain PFC's. Many of these wells (private, public, and those owned and operated by ANG) will either be treated for PFC removal or removed from service. As a result, PFCs should be significantly reduced, if not absent, in the receiving wastewater system. How would PFC concentrations in surface and groundwater near the STP be affected?
5. Surface water sampling in the area of the former Willow Grove Navy base and the current Horsham Air Guard Station indicates significant levels of PFCs in Park Creek, Little Neshaminy Creek, Pennypack Creek and their tributaries. How do these concentrations of PFCs affect groundwater PFC concentrations in areas surrounding these surface waters?

Should you have any questions please do not hesitate to contact me.

Sincerely,



Toby J. Kessler, P.G.
Hydrogeologist
Gilmore & Associates, Inc.

TJK/dmk

cc: Willington Lin, P.E., NAVFAC BRAC Program Management Office East
Michael Shannon Resolution Consultants (AECOM/Ensafe Joint-Venture)
Lisa Senior, P.G., USGS
Christopher Crockett, PhD, Aqua PA
Preston Luitweiler, P.E., Aqua PA
Alexander Dyke, P.E., Gilmore & Associates, Inc.
Stuart Rosenthal, P.E., Gilmore & Associates, Inc.
Theresa Funk, P.E., Gilmore & Associates, Inc.