



October 18, 2018

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

Reference: Air National Guard Facility Investigation – PFOS/PFOA  
Review of Draft Final Surface Water Study Technical Memorandum for PFC Investigation

Dear Ms. O'Rourke:

On behalf of Horsham Water & Sewer Authority, G&A has reviewed the Draft Final Surface Water Study Technical Memorandum for the Perfluorinated Compound Facility Investigation at Horsham Air Guard Station (AGS), Horsham, Pennsylvania issued by Leidos on behalf of the Air National Guard (ANG). Evaluation of surface water is a potential concern to HWSA due to the potential pathway of PFOS and PFOA through surface water into sediments and groundwater. Below please find a summary of the report that we reviewed and our comments.

### **Summary**

Leidos performed sampling of surface water during four (4) sampling events. Surface water samples were analyzed for the six (6) perfluorinated alkyl substances (PFAS) listed in the Environmental Protection Agency's Third Unregulated Contaminant Monitoring Rule (UCMR3).

Wet sampling was performed October 24 and 25, 2017 and June 28 and 29, 2018. Dry sampling was performed October 4 and 5, 2017 and March 19, 2018. The sampling was performed within the AGS property as well as outside their property. A total of thirty-six (36) sampling locations were sampled, although some sample locations were dry during some of the events.

Wet-weather sampling was performed following a storm event of greater than 0.25 inches over 24 hours at least 72 hours from the previous 0.10-inch storm event. Dry-weather sampling was performed following at least 96 hours of zero precipitation after the previous 0.10-inch storm event.

Through evaluation of the data gathered during these sampling events, Leidos provided interpretations as to whether the PFAS contamination in surface water is derived from groundwater (such as during dry weather events) or from surface water runoff (such as during wet weather events). Leidos also utilized the sampling information to further evaluate whether their current surface water treatment system setup in the northwest portion of the property is effectively treating the PFAS runoff.

A summary of the conclusions in the Draft report is as follows:

- PFAS contamination is flowing onto the property from the south (from the Navy Willow Grove NASJRB site) in both groundwater and surface water.

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- PFAS contamination is discharging from groundwater to surface water in the basin in the northwest portion of the AGS property, in the unnamed Tributary to Park Creek (northwest of the AGS property), and in Park Creek (northwest and north of the AGS property).
- There are potentially residual sources of PFAS contamination within the AGS property.
- During precipitation events, there is increased PFAS contamination in surface water flowing to the Unnamed Tributary to Park Creek (northwest of the AGS) as well as to the Unnamed Tributary to Neshaminy Creek (northeast of the AGS).

Based on results of sampling, Leidos recommends additional characterization of potential sources of PFAS within the AGS property, evaluation of methods to prevent migration of PFAS from the Navy site (from the south), and enhancement treatment of surface water in the northwest basin.

### **G&A Comments**

G&A has the following comments on the reviewed report:

1. We note that the pathways for PFAS contamination to migrate from the AGS property into area groundwater supplies has not been evaluated. The increased migration of PFAS during precipitation events is a potential concern with respect to migration of PFAS from surface water into sediments, then from sediments into groundwater, and from groundwater into drinking water supplies.
2. Further evaluation of surface water and sediments should be performed within the Unnamed Tributary to Neshaminy Creek to the northeast of the AGS property. This is a potential concern to HWSA due to proximity of HWSA Well 10. Although the water is being treated for PFOS and PFOA at Well 10, the treatment system was set up as an interim remedial response to an immediate identification of contamination in this well. Evaluation of the source and pathways of this contamination should be performed. Long term remedies to address the source of contamination should be pursued.
3. Further evaluation of surface water and sediments should be performed within the Unnamed Tributary to Park Creek to the northwest of the AGS property. This is a potential concern to HWSA due to proximity of HWSA Well 40. Although the water is being treated for PFOS and PFOA at Well 40, the treatment system was set up as an interim remedial response to an immediate identification of contamination in this well. Evaluation of the source and pathways of this contamination should be performed. Long term remedies to address the source of contamination should be pursued.
4. We recommend further evaluation of the potential leaching characteristics of PFAS in soil and sediment on the AGS property and in offsite locations.
5. We note that multiple agencies have sampled PFAS in surface water and sediment in areas surrounding the Navy and AGS sites. A comprehensive evaluation of these studies and whether any changes are occurring over time due to remedial actions should be performed.

We note that the ANG investigation of PFAS is ongoing and will further evaluate the extent of contamination and long-term solutions. We appreciate the ongoing communication.

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

Sincerely,



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

TJK/dmk

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