



PHIL-27911

February 23, 2024

Project Number 08005-WE04

Mr. Thomas Magge
Clean Water Environmental Program Manager
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

Reference: Contract No. N6247016D9008
Contract Task Order No. WE04

Subject: Temporary Discharge Monitoring Report - January 1 to January 31, 2024
Hangar 680 Per- and Polyfluoroalkyl Substances Pilot Test System
Former Naval Air Station Joint Reserve Base Willow Grove
Horsham Township, Pennsylvania

Dear Mr. Magge:

On behalf of the United States (U.S.) Navy, Tetra Tech is pleased to submit the Temporary Discharge Monitoring Report (DMR) for the Hangar 680 per- and polyfluoroalkyl substances (PFAS) pilot test system at the Former Naval Air Station Joint Reserve Base Willow Grove in Horsham Township, Pennsylvania. This DMR includes available influent, effluent, and field quality assurance/quality control (QA/QC) results for sampling from January 1 to January 31, 2024.

The temporary discharge was first approved by the Pennsylvania Department of Environmental Protection (PADEP) on February 10, 2020, as requested by the U.S. Navy under a Federal Facility Agreement permit equivalency. PADEP approved subsequent modifications to the permit equivalency in letters dated September 5, 2020, January 27, 2021, July 23, 2021, January 13, 2022, July 1, 2022 (modified on September 12, 2022), December 28, 2022, June 14, 2023, and December 22, 2023. In addition to previous sampled parameters, the Navy began sampling for perfluorobutanoic acid (PFBA) on June 26, 2023.

Full-time operation of the Hangar 680 PFAS pilot test system was initiated on March 2, 2020. A total of 35,074,152 gallons of water have been treated and discharged to Outfall 8 as of January 30, 2024. The discharge for the reporting period complied with the effluent limitations and monitoring requirements as summarized in the following bullets:

- Influent samples were collected on January 8 and January 9, 2024. These samples were collected from shallow extraction well HA-EW-1S, the first intermediate extraction well HA-EW-1I, the second intermediate extraction well HA-EW-2I, and the combined influent of these extraction wells. These samples were analyzed for PFAS, specifically PFOA and PFOS, and the results are provided in Table 1. During this reporting period, the first intermediate extraction well, HA-EW-1I, was operated at approximately 6.3 gpm, and the second intermediate extraction well, HA-EW-2I, was operated at approximately 5.4 gpm. The first shallow extraction well, HA-EW-1S, was offline until January 9, 2024, but following the replacement of the pressure sensor, it was operated at approximately 4.7 gallons per minute (gpm).

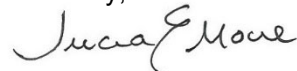
- Trip blank, field blank, effluent, and effluent duplicate samples were collected on January 8, 2024, and analyzed for the permitted analytes: PFAS (specifically PFOA and PFOS), tetrachloroethene (PCE), trichloroethene (TCE), carbon tetrachloride (CTC), 1,2-dichloroethane (1,2-DCA), and total lead. All effluent analytical sample results for this reporting period are provided in Table 2. The effluent and duplicate results were just above the PADEP MCL of 0.018 µg/L for PFOS. It should be noted that “190” was used twice in duplicate sample IDs in December 2023 (sample ID “HA-DUP-190-20231219”) and January 2024 (sample ID “HA-DUP-190-20240108”). However, because the sample date is also included in the sample ID and thus the ID is still unique, it will remain as is. During this reporting period, the system discharge was approximately 13.4 gpm; this value is lower than the sum of the influent flows might suggest because it includes the time that EW-1S was offline (and its flow was 0 gpm).
- Trip blank QA/QC samples were collected on January 8, 2024. These samples were analyzed for PCE, TCE, CTC, and 1,2-DCA. The results are provided in Table 2.
- Per the December 22, 2023 permit equivalency extension, the sampling frequency of both the influent and effluent parameters was reduced from twice monthly to once monthly. This change took effect for the January 2024 sampling event.
- Per the December 22, 2023 permit equivalency extension, monthly monitoring of PFOA and PFOS shall be conducted at discharge sampling port HA-Mid2IX to determine if maintenance actions are needed. The effluent result there was above the PADEP MCL for PFOS. Due to this, and out of an abundance of caution, Tetra Tech currently is planning treatment system media changeout. This will be scheduled when the media are procured.

The aqueous IDW treatment system was not operated during this reporting period; therefore, there are no discharge results to report.

Lastly, analytical results from samples collected since the start of the Hangar 680 PFAS pilot test system and intermittent operation of the aqueous IDW treatment system have demonstrated that both systems continue to effectively reduce the compounds identified in the permit equivalency to below the established limits.

Please do not hesitate to contact me if you have any questions.

Sincerely,



Tricia E. Moore, PG
Senior Project Manager

TEM/nfs

Attachments:

Table 1 – NPDES Permit Equivalency Influent Sample Results from January 1, 2024 through January 31, 2024

Table 2 – NPDES Permit Equivalency Effluent Sample Results from January 1, 2024 through January 31, 2024

c: Brian Helland (Navy BRAC PMOE)
Dawn DeFreitas (Navy BRAC PMOE)
Jon Harris (Navy BRAC PMOE)
Colin Wade (PADEP)

Sarah Kloss (EPA Region 3)
Navy Caretaker Office
Horsham Library
NIRIS

TABLES

This page intentionally left blank

**Table 1: NPDES Permit Equivalency Influent Sample Results from January 1, 2024 through January 31, 2024
Hangar 680 PFAS Pilot Test
Former Naval Air Station Joint Reserve Base Willow Grove**

Parameter	Maximum Effluent Limit ⁽¹⁾	Sample			
		Shallow Influent	Intermediate Influent	Intermediate Influent - 2	Combined Influent
Operation Week		202			
Sample ID		HA-EW-1S-20240109	HA-EW-1I-20240108	HA-EW-2I-20240108	HA-CombinedINF-20230108
Sample Date		1/9/2024	1/8/2024	1/8/2024	1/8/2024
Units		µg/L	µg/L	µg/L	µg/L
Perfluorooctanoic acid (PFOA)	NA	0.405	3.240 D	4.060 D	3.520 D
Perfluorooctanesulfonic acid (PFOS)	NA	19.100 D	18.600 D	94.800 D	66.000 D
PFOA + PFOS	0.07	19.505	21.840	98.860	69.520

Notes:

⁽¹⁾: Maximum effluent limits per PADEP Temporary Discharge Request - Extension (December 22, 2023).

Bold value indicates result is above applicable maximum effluent limit.

PADEP: Pennsylvania Department of Environmental Protection.

µg/L: Micrograms per liter (also referred to as parts per billion [ppb]).

D: Dilution Run. Initial run outside the initial calibration range of the instrument.

**Table 2: NPDES Permit Equivalency Effluent Sample Results from January 1, 2024 through January 31, 2024
Hangar 680 PFAS Pilot Test
Former Naval Air Station Joint Reserve Base Willow Grove**

Parameter	Maximum Effluent Limit ⁽¹⁾	Sample		
		Effluent	Effluent Field Duplicate	Field Blank
Operation Week		202		
Sample ID		HA-GEFF-20230108	HA-DUP-190-20240108	HA-FB-20240108
Sample Date		1/8/2024	1/8/2024	1/8/2024
Units		µg/L	µg/L	µg/L
Perfluorooctanoic acid (PFOA)	NA	0.00226 U	0.00222 U	0.00243 U
Perfluorooctanesulfonic acid (PFOS)	NA	0.01810	0.01890	0.00243 U
PFOA + PFOS	0.07	0.01810	0.01890	ND

Parameter	Maximum Effluent Limit ⁽¹⁾	Sample		
		Effluent	Effluent Field Duplicate	Trip Blank
Operation Week		202		
Sample ID		HA-GEFF-20230108	HA-DUP-190-20240108	HA-TB-20240108
Sample Date		1/8/2024	1/8/2024	1/8/2024
Units		µg/L	µg/L	µg/L
Tetrachloroethylene (PCE)	0.69	0.20 U J1	0.2 U	0.20 U
Trichloroethylene (TCE)	2.5	0.2 U J1	0.2 U	0.2 U
Carbon Tetrachloride	0.23	0.2 U J1	0.2 U	0.2 U
1,2-Dichloroethane	0.38	0.2 U	0.2 U	0.2 U
Lead (total)	3.2	0.37 J	0.38 J	--

Notes:

⁽¹⁾: Maximum effluent limits per PADEP Temporary Discharge Request - Extension (December 22, 2023).

Effluent and effluent field duplicate results have not yet been validated.

Bold value indicates result is above applicable maximum effluent limit.

Quality assurance/quality control sample (field blank and trip blank) results are not validated.

PADEP: Pennsylvania Department of Environmental Protection

µg/L: Micrograms per liter (also referred to parts per billion [ppb]).

NA: Not applicable.

U: Analyte not detected (lab qualifier). Value reported to limit of detection.

ND: Not detected.

J/J1: Estimated (lab qualifier). The analyte was positively identified; the quantitation is an estimation.

--: Not sampled.