TETRA TECH

PHIL-27981

July 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 - June 1 to June 30, 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 June 1 to June 30, 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 discharge approval PADEP approved subsequent modifications to the discharge approval 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, December 22, 2023, and June 27, 2024. In addition to previously sampled parameters, the Navy began sampling for perfluorobutanoic acid (PFBA) on June 26, 2023, although this is not a discharge approval requirement.

Full-time operation of the Hangar 680 PFAS pilot test system was initiated on March 2, 2020. A total of 37,859,956 gallons of water have been treated and discharged to Outfall 8 as of June 24, 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 June 3, 2024. These samples were collected from the combined influent of shallow extraction well HA-EW-1S and intermediate extraction well HA-EW-1I. These samples were analyzed for PFAS, specifically PFOA and PFOS, and the results are provided in Table 1. HA-EW-2I was offline from May 20 to June 6, including during influent sample collection. During this time, HA-EW-1S was operated at approximately 3.23 gpm and HA-EW-1I was operated at 10.56 gpm. On June 6, HA-EW-2I returned online after replacing the VFD and pump motor, and extraction well flow rates were returned to optimal rates. From June 6 to the end of the reporting period, HA-EW-1S was operated at approximately 3.46 gpm, HA-EW-1I was operated at approximately 5.04 gpm, and HA-EW-2I was operated at 7.48 gpm.

- The pilot test system and extraction wells were shut down from June 27 to July 1 while the Navy performed a treatment media changeout in the three polishing GAC vessels and the four ion exchange

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(IX) resin vessels. The changeout was performed on June 27 and 28, and the system was turned back online July 1.

- Effluent, effluent duplicate, trip blank and field blank samples were collected on June 3, 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. During this reporting period, the system discharge was approximately 16.2 gpm. Following the media changeout completed on July 1, the overall system flow rate increased to 20.5 gpm.

- Trip blank QA/QC samples were collected on June 3, 2024. These samples were analyzed for PCE, TCE, CTC, and 1,2-DCA. The results are provided in Table 2.

- Per the June 27, 2024 discharge approval extension, monthly monitoring of PFOA and PFOS shall be conducted at discharge sampling port HA-Mid2IX, the third ion-exchange resin vessel, to determine if maintenance actions are needed. The samples taken from this port did not exceed the PA MCL for PFOA/PFOS this reporting month. Despite these levels not being exceeded, the Navy voluntarily conducted treatment media change out of the LeadIX, Mid1IX, Mid2IX, LagIX, and three GEFF vessels from June 27 to June 28, 2024.

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 discharge approval to below the established limits.

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

Sincerely,

Stephen J. Mitchell, P.G.
Senior Project Manager

SM/nfs

Attachments:

Table 1 – NPDES Discharge Approval Influent Sample Results from June 1, 2024 through June 30, 2024
Table 2 – NPDES Discharge Approval Effluent Sample Results from June 1, 2024 through June 30, 2024

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TABLES

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Table 1: NPDES Discharge Approval Influent Sample Results from June 1, 2024 through June 30, 2024
Hangar 680 PFAS Pilot Test
Former Naval Air Station Joint Reserve Base Willow Grove

Parameter	Maximum Effluent Limit [(1)]	Sample	
		Combined Influent	
Operation Week		223	
Sample ID		HA-CombinedINF-20240603	
Sample Date		6/3/2024	
Units	µg/L	µg/L	
Perfluorooctanoic acid (PFOA)	NA	2.460	D
Perfluorooctanesulfonic acid (PFOS)	NA	20.000	D
PFOA + PFOS	0.07	**22.460**	

Notes:

[(1)]: Maximum effluent limits per PADEP Temporary Discharge Request - Extension (June 27, 2024).

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]).

--: Not sampled.

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

Table 2: NPDES Discharge Approval Effluent Sample Results from June 1, 2024 through June 30, 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		223					
Sample ID		HA-GEFF-20240603		HA-DUP-195-20240603		HA-FB-20240603	
Sample Date		6/3/2024		6/3/2024		6/3/2024	
Units	µg/L	µg/L		µg/L		µg/L	
Perfluorooctanoic acid (PFOA)	NA	0.00042	J	0.00033	J	0.00063	U
Perfluorooctanesulfonic acid (PFOS)	NA	0.00084	J	0.00048	J	0.00054	U
PFOA + PFOS	0.07	0.00125	J	0.00082	J	ND	

Parameter	Maximum Effluent Limit [1]	Sample					
		Effluent		Effluent Field Duplicate		Trip Blank	
Operation Week		223					
Sample ID		HA-GEFF-20240603		HA-DUP-195-20240603		HA-FB-20240603	
Sample Date		6/3/2024		6/3/2024		6/3/2024	
Units	µg/L	µg/L		µg/L		µg/L	
Tetrachloroethylene (PCE)	0.69	0.20	U	0.20	U	0.20	U
Trichloroethylene (TCE)	2.5	0.20	U	0.20	U	0.20	U
Carbon Tetrachloride	0.23	0.20	U	0.20	U	0.20	U
1,2-Dichloroethane	0.38	0.20	U	0.20	U	0.20	U
Lead (total)	3.2	0.70	U	0.70	U	--	

Notes:

[1]: Maximum effluent limits per PADEP Temporary Discharge Request - Extension (June 27, 2024).

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.