



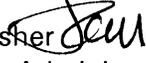
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# MEMORANDUM

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Date: June 23, 2022

To: The Honorable Chair and Members  
Pima County Board of Supervisors

From: Jan Leshner   
County Administrator

Re: **Quarterly Update on Per- and Polyfluoroalkyl Substances (PFAS)**

The Board requested periodic updates on the status of per- and polyfluoroalkyl substance mitigation activities as it pertained drinking water in this community. The attached report from Director Escobar and the Department of Environmental Quality details the current local and federal status of the broader PFAS issue. It is notable that the treatment efforts undertaken by the Town of Marana and the City of Tucson are yielding good results with PFAS concentrations far below the current standards for human consumption. Additionally, the Regional Wastewater Reclamation Department periodically monitors PFAS concentrations flowing into and out of the water reclamation facilities.

Although Pima County is not a water provider, we remain deeply engaged in this issue as consumers of groundwater, in our role in wastewater treatment and due to the potential health implications of this class of chemicals.

JKL/anc

Attachment

c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works  
Francisco García, MD, MPH, Deputy County Administrator for Health & Community Services and Chief Medical Officer  
Barbara Escobar, Director, Pima County Department of Environmental Quality  
Jackson Jenkins, Director, Regional Wastewater Reclamation  
Terry Cullen, MD, MS, Public Health Director, Pima County Health Department

**DATE:** June 20, 2022

**TO:** Jan Leshner  
County Administrator

**FROM:** Barbara A. Escobar *BAE*  
PDEQ Director

**RE: PFAS Update – Spring 2022**

The Pima County Board of Supervisors requested a quarterly update on Per- and Polyfluoroalkyl Substances (PFAS). The majority of activities involve federal agencies developing analytical methods, drinking water standards, and safe disposal methods of AFFF. Local and state actions are transitioning into routine operations of treatment plants and monitoring programs.

**Local Activities**

Well-screening was conducted within the Marana School District and Tucson Medical Center (TMC). The school had PFOA and PFOS an order of magnitude smaller than the 2016 Health Advisory Level (HAL) of 70 parts per trillion (ppt). TMC had no detectable concentrations of PFOS or PFOA.

Four reclamation plants are operating within Pima County boundaries to remove PFAS identified during screening sampling (Table 1). The Town of Marana won the 2021 Aquarius Recognition Program Award for Excellence in Community Engagement for the Picture Rocks and Airline Lambert Water Treatment Campuses.

<b>Reclamation Plants</b>	<b>Average PFOA+PFOS Influent (ppt)</b>	<b>Average PFOA+PFOS Effluent (ppt)</b>	<b>Volume of water treated (MG)</b>
Airline/Lambert Water Treatment Campus	76.1	<1.70	11
Central Tucson PFAS Project (CTPP)	1,785	<1.80	19.4
Picture Rocks Water Treatment Campus	49.4	<1.70	31
Tucson Airport Area Remediation Project (TARP)	38.7	<2.0	270.7
Summary	-	<1.7 to <2.0	332.1

Table 1. Operational Data from Four PFAS Removal Plants within Pima County

Additional monitor wells are being drilled downstream of the Central Tucson PFAS project. These wells will assist in defining the lateral extent of the PFAS plume. City of Tucson Council Member Steve Kozachik has planned an Open House for July 14, 2022.

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The screening sampling conducted in 2019 for nine wells that might have PFAS identified a mobile home park (MHP) that had concentrations just above the Health Advisory Level of 70 ppt. Bottled water continues to be delivered to all residents while a contract is negotiated to connect the MHP to a safe source of water. ADEQ has been working urgently with the Morris Air National Guard to have the nine wells resampled as part of their Remedial Investigation.

RWRD completed a fourth round of sampling at the Water Reclamation Facilities (WRFs) in May 2022 to measure PFAS flowing into the WRFs and flowing out. The analysis of the samples is still being conducted by the subcontractors. Staff is not expecting the results to be different due to the City of Tucson drinking water system remaining free of PFAS and the county has not changed its wastewater treatment processes. RWRD is also participating in an ADEQ-funded study of PFAS discharged from water reclamation facilities permitted under the Arizona Pollutant Discharge Elimination System (AZPDES) program. ADEQ's sampling was completed in early June 2022.

Communications between the county and local agencies keep fire departments and the public informed of ongoing events and potential risks with PFAS. The military advises the county when they plan to conduct fire training, which they complete without using Aqueous Film Fighting Foam (AFFF). Gardeners interested in the safety of applying reclaimed water to crops have requested information about the impacts of PFAS. Research shows that plants accumulate PFAS in the roots and leaves at bioaccumulation levels depending upon the plant, the chemical, length of time, and other factors.

### **State Activities**

ADEQ has been screening wells near Arizona airports required to obtain an Airport Operating Certificate (14 CFR §139 *et seq*) and Public Well Systems (PWS) where there was potential exposure to PFAS. Most airports with AOCs report that they conduct fire-training activities, but not on site. When PFAS occurred in concentrations higher than 70 ppt, ADEQ supplied bottled water to the customers of the PWS until a safe source was permanently available.

The Arizona Board of Regents agreed with the urgency of solving the pressing problem with PFAS and approved two grant proposals. ADEQ submitted problem statements as part of the Regents Grant Proposals process and requested a way of addressing Arizona's need for "cost-effective technology to remediate PFAS contaminated water and ... cost-effective means to replace current AFFF supplies with a more benign but effective fire suppressant." ABOR approved \$3.1M on April 5, 2022, to the team members from the University of Arizona, Northern Arizona University, and Arizona State University.

ADEQ's contractor sampled PFAS. They are collecting samples to determine the appropriate Effluent Limitation Guidelines that would be applied in an AZPDES permit. RWRD participated in the sampling in early June.

### Federal Activities

The best outcomes occur with source control activities rather than post-discharge clean-ups. The evidence stems from CDC’s Fourth Report on Human Exposure to Environmental Chemicals Remedial investigations. A plot of the data shows that PFOA and PFOS concentrations in blood serum have declined steadily over a 17-year period (Figure 1).

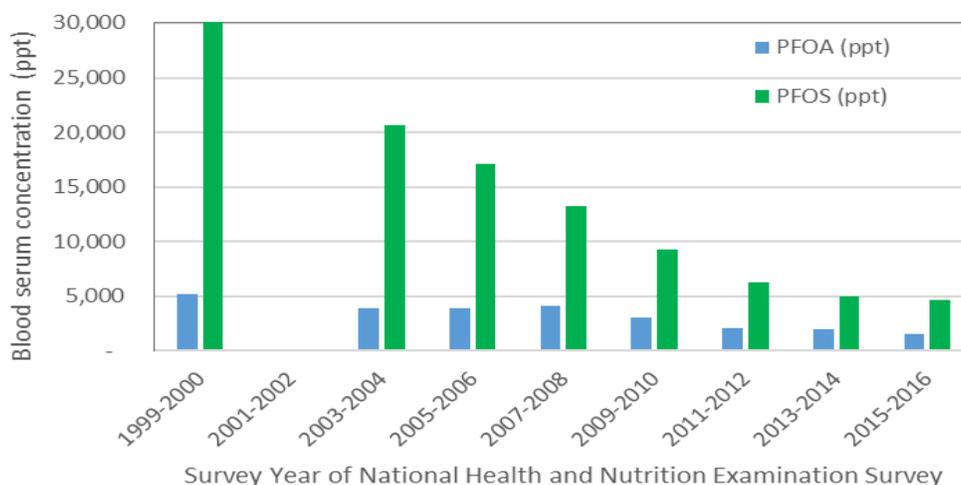


Figure 1. PFOS and PFOA Blood Serum Levels, 1999 – 2016

EPA took action to collect relevant data, publish draft toxicity reports and identify more PFAS chemicals with Regional Screening Levels (RSL) and Health Advisory Levels (HAL).

On May 3, 2022, EPA noticed the availability of reports characterizing the toxicity of PFOS and PFOA. The public comment period was extended to July 2, 2022. The proposed acute standards, the maximum concentration, for freshwater aquatic life are 49 mg/L and 3.0 mg/L for PFOA and PFOS, respectively. The proposed chronic standards for constant exposure are 0.094 mg/L and 0.0084 mg/L for PFOA and PFOS, respectively.

On May 18, EPA added seven more to the existing five PFAS chemicals that have RSLs. The RSLs identify what chemicals and what concentrations are recommended for routine sampling. This list gives a framework for health agencies to know when preliminary water quality results indicate more sampling is needed.

In early June 2022, EPA began Phase I of the National PFAS Testing Strategy to fill in the human health and ecological data gaps. The first chemical to be tested is 6:2 fluorotelomer sulfonamide betaine (6:2 FTAB). The Order requires Chemours Company, DuPont DeNemours Inc., National Foam Inc., and Johnson Controls to test the physical-chemical properties and health effects following inhalation of 6:2 FTAB and submit the data to EPA within 400 days. EPA expects the results to inform their understanding of more than 500 PFAS chemicals that have a similar structure in this terminal category.

On June 14, EPA announced the drinking water HALs for four PFAS (Table 2). While the HALs are non-enforceable and non-regulatory guidelines, many agencies use them as influential scientific documents. The announcement includes a description of treatment technologies to remove each PFAS. For PFOA and PFOS, EPA expects to propose a Maximum Contaminant Level Goal (MCLG) for the National Primary Drinking Water Standards in the fall of 2022 and finalize it by the fall of 2023.

<b>PFAS chemical</b>	<b>Health Advisory Level (ppt)</b>	<b>Status</b>	<b>Promulgated Minimum Reporting Limit (ppt)</b>
PFOA	0.004	Interim	4
PFOS	0.02	Interim	4
PFBS	2000	New, final	3.5
Gen	10	New, final	3.7

Table 2. June 2022 PFAS Health Advisory Levels

Testing technology reliably detects PFAS to the Minimum Reporting Limit (MRL), which is higher than the HAL for PFOA and PFOS. EPA set the HALs based on epidemiological studies rather than the current testing technology and reasoned that the risks of unmeasurable trace concentrations are lower than the risks of measurable concentrations.

Water samples collected from wells on-base and off-base from the Morris Air National Guard Base were analyzed for PFOS and PFOA. The highest detections were 4,880 ppt on-base and 2,280 ppt off-base. No one is drinking water from these wells. DoD is following the CERCLA process to investigate the PFAS releases and is currently in the Remedial Investigation (RI) phase. A draft work plan is being developed to characterize site conditions, assess risks and conduct treatability testing to evaluate the potential performance and cost of the treatment technologies under consideration. A Feasibility Study (FS) of the alternative remedial actions will be conducted at the same time as the RI.

The DOD estimated the total bill for its environmental restoration programs to clean up all known remaining contamination is \$31 billion. They requested \$227.2 million for the fiscal year 2023 for the congressionally mandated assessments for PFAS at 700 bases and National Guard locations. During a May 26 hearing before the defense appropriations subcommittee, Representative Betty Collum (D-MN) asked why the DOD asked for a smaller budget than enacted for FY22, especially given that more restrictive standards were likely to be proposed and more cleanup would be required. DOD's Deputy Assistant Secretary of Environment and Energy Resilience Richard Kidd said they still had residual funds due to the high level of funding previously appropriated.

## **Conclusions**

Significant activity is taking place. Local water providers are remediating PFAS-contaminated groundwater, which limits exposure of PFAS to the public and limits the areal extent of PFAS

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plumes. On-going well drilling and sampling provide a clearer picture of where PFAS occurs. The state is conducting research and has funded additional research by state universities. EPA is requiring manufacturers to test their chemical's health effects. PFAS toxicity studies have been published resulting in more PFAS chemicals with RSLs and HALs. The military plans to use residual funds from last year to fund a portion of next year's activities.

c: Dr. Francisco García, Deputy County Administrator  
Carmine DeBonis, Deputy County Administrator  
Marie Light, PDEQ Principal Hydrologist