Maryland Department of the Environment (MDE) Per-and Polyfluoroalkyl Substances (PFAS) in Surface Waters and Oysters in the St. Mary's River

Introduction

On March 3, 2020, the Navy sponsored a public information meeting for residents in the vicinity of Patuxent Naval Air Station to learn about the Navy's assessment program to determine the occurrence of certain PFAS on and in the vicinity of Navy installations that have known or potential releases of these compounds into the environment. Concerns were raised at this public meeting about potential exposures to these compounds associated with the use of PFAS-containing materials at the Webster Field Annex. As a consequence of the concerns expressed at this public meeting and in furtherance of the Department's overall mission to protect and restore the environment for the health and well-being of all Marylanders, the Department is initiating a pilot study to assess whether surface water and potentially oysters in the vicinity of Webster Field Annex have elevated levels of PFAS. Sampling is tentatively scheduled to begin in early April 2020. Results will be available by the middle of May 2020; however, the Department will need some time to analyze and interpret the results. Due to the State of Emergency, this timeline is subject to change to assure the safety of Department staff collecting the samples.

What is PFAS?

PFAS are a family of human-made chemicals that are found in a wide range of products used by consumers and industry. There are nearly 5,000 types of PFAS, some of which have been more widely used and studied than others. Many PFAS are resistant to grease, oil, water and heat. For this reason, beginning in the 1940's, PFAS have been used in a variety of applications including in stain- and water-resistant fabrics and carpeting, cleaning products, paints, and fire-fighting foams. In addition, certain PFAS are authorized by the U.S Food and Drug Administration (FDA) for limited use in cookware, food packaging and processing.

The widespread use of PFAS and their ability to remain intact in the environment means that over time PFAS levels from past and current uses can result in increasing levels of environmental contamination. Accumulation of certain PFAS has also been shown to potentially occur throughout the food chain. Measuring PFAS concentrations in food, estimating dietary exposure and determining the associated health effects is an emerging area of science[1]. For additional information on PFAS reference the corresponding fact sheets provided by the Agency for Toxic Substances and Disease Registry (ATSDR) and the Environmental Protection Agency (EPA). https://www.atsdr.cdc.gov/pfas/docs/pfas_fact_sheet.pdf https://www.epa.gov/sites/production/files/2019-12/documents/pfas_groundwater_fact_sheet.pdf

MDE Sampling Response

The Maryland Department of the Environment is putting a priority on the development of a comprehensive plan for PFAS, including identifying the areas with the highest potential exposure risks. This includes looking at surface water and shellfish.

Due to concerns raised by citizens that live near Webster Field Annex in St. Mary's County following a public meeting on PFAS at the Pax River NAS on March 3rd, the Department is utilizing our technical experts and working closely with our partners, such as the Maryland Department of Natural Resources (DNR), to gather information on PFAS issues, including information regarding sampling methodologies and potential advisory

[1] Consumers should keep in mind that exposure risk from consumption of commercially caught fish and shellfish is usually far less than for recreationally caught fish and shellfish. This is because consumers that purchase fish and shellfish from a certified dealer are not getting the fish or shellfish from the same location every week or month. Additional information on shellfish harvesting in Maryland can be found at: https://mde.maryland.gov/programs/Marylander/fishandshellfish/Pages/index.aspx

levels based on sampling results. The Department will begin a pilot project in the St. Mary's River to look at surface water and oysters. We will also collect a sample of the effluent from the Webster Field wastewater treatment facility. In addition, the Department will also test water and oysters near Hog Point and across the mouth of the Patuxent River near Drum Point. This decision is due to data from 1997 in a Journal Article (https://www.researchgate.net/publication/11454831_Perfluorooctane_Sulfonate_in_Oysters_Crassostrea_virginica_from_the_Gulf_of_Mexico_and_the_Chesapeake_Bay_USA), the study had six sites in Maryland where five of the six sites were non-detect for PFOS in oysters and one site, Hog Point, had the second highest level of PFOS found during the study. Details regarding sampling locations, number of samples and methodology can be found in the accompanying document titled St. Mary's River PFAS Pilot Study.