Rocky Mountain Arsenal
Perfluorinated Compounds (PFCs)
Frequently Asked Questions

1.) What Are Perflourinated Compounds?

Perfluorinated compounds (PFCs) are used in a wide range of common products to make materials stain and stick resistant. Some common product applications include fast-food packaging, carpeting, clothing, paints, Teflon and fire-fighting foam. Since PFCs are so widely used and do not break down easily, many areas across the United States have residual levels of PFCs in the environment.

At RMA, the two PFC compounds of interest are perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), which are often referred to as a group as perfluoroalkyl and polyfluoroalkyl substances (PFAS). These substances are typically associated with fire-fighting foams, and the health advisory level that exists is for PFOS or PFAS, either individually or in combination.

2.) Why are PFCs being evaluated at Rocky Mountain Arsenal?

The EPA has classified PFCs as among a group of "emerging contaminants" that are being looked at more broadly and warrant further study. In 2016, the Army issued guidance for evaluating restoration sites, such as Rocky Mountain Arsenal (RMA), for potential PFC contamination to determine if PFCs are present and whether environmental response actions are needed. This is consistent with the Army's commitment to continually evaluate RMA to ensure it remains fully protective of human health and the environment.

3.) Were PFCs Used at Rocky Mountain Arsenal?

RMA records show only one documented use of a PFC-related product on site. In 1979, responders applied 25 gallons of fire-fighting foam in the former South Plants manufacturing area near the center of the site. The five RMA groundwater samples that exceeded the EPA's health advisory level for PFCs were all located near the foam application area in the site interior and away from RMA's boundaries.

4.) What Does Testing of RMA Monitoring Wells Show?

The Army has completed two rounds of testing for PFCs. The first took place in 2017-2018 and included sampling 21 monitoring wells to test the groundwater. The 21 wells were selected to focus on areas within and downgradient of potential source areas. PFCs were detected in 15 of the 21 samples at low levels, with only 1 of the 15 samples above the EPA health advisory level (0.07 μg/l).

To corroborate those results and confirm there are no significant sources of PFC contamination at RMA, the Army conducted a second round of sampling in 2019. Additional sampling was conducted at 25 monitoring wells located in and downgradient of former manufacturing and waste disposal areas. (Two additional samples were collected in December 2019 to confirm results). PFCs were detected in 19 of the 25 wells sampled. Five had combined concentrations above the health advisory concentration of 0.07 μg/L. The five samples were all located in or near the former South Plants area in the center of the site. There were no detections above the health advisory level outside the immediate vicinity of the South Plants source area.

5.) What Does RMA Groundwater Treatment System Testing Show?

The Army operates four groundwater treatment plants at RMA, including two plants at the Refuge boundary with Commerce City. These treatment plants contain and treat contaminated groundwater from RMA. During both the 2017-2018 and 2019 testing programs, influent and effluent samples were collected from the four treatment plants, and all detections were below the health advisory level. The treatment plants are equipped to successfully treat groundwater for PFCs if they are present.

6.) What Are the Next Steps?

Based on testing results, RMA does not appear to be a significant source of PFC contamination in groundwater, nor have PFCs been detected above the health advisory level in groundwater near RMA's boundaries. Existing groundwater treatment plants are equipped to successfully treat groundwater if PFCs are present. As part of its long-term groundwater and surface water monitoring program, the Army will continue to analyze treatment system influent and effluent for PFCs on an ongoing basis and select wells as needed.

7.) Questions?

The full 2019 Perfluorinated Compounds Data Summary Report is available for review online at www.rma.army.mil. You can also contact either: Charlie Scharmann, U.S. Army Program Manager, charles.t.scharmann.civ@mail.mil , or Scott Greene, U.S. Army Environmental Engineer, scott.e.greene.civ@mail.mil, with questions.