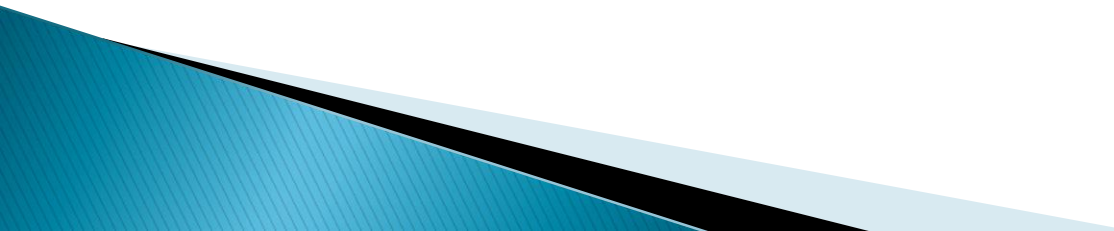


# Recommendation on Perfluorinated Compound Treatment Options for Drinking Water – *Comments, Response & Report Amendments*

New Jersey Drinking Water Quality Institute  
Treatment Subcommittee  
June 4, 2015



# New Jersey Drinking Water Quality Institute Treatment Subcommittee

## Members

Laura Cummings, P.E., Chair

Anthony Matarazzo

Norman Nelson, P.E.

Fred Sickels

Carol T. Storms

## NJDEP Support

Lee Lippincott

Lorraine Salamanca

Katrina Wessling

# DWQI Treatment Subcommittee

At the direction of the NJDEP Commissioner, the Drinking Water Quality Institute (DWQI) Treatment Subcommittee is responsible for evaluating best available treatment technologies or methods, for removal of the hazardous contaminants from drinking water, as well as overall program review.

# Cost of Treatment

## *Comment:*

- ▶ The analysis of costs was not detailed enough.

## *Response:*

- ▶ As part of the evaluation of feasibility and practicability, *general costs* (e.g. cost of carbon/lb.) were identified and considered.
- ▶ As systems and circumstances (e.g. pre-treatment needs, PFC concentration, site conditions, etc.) vary widely, detailed cost analysis was not feasible.

# Cost of Treatment

## *Response (contd.):*

- ▶ Information regarding the cost of granulated activated carbon (GAC), the most common treatment and one that is currently employed in NJ to treat for PFCs and other chemicals (e.g. SOCs and VOCs) was included in the report.

# Cost of Treatment

## *Report Amendments:*

- ▶ **Oakdale, MN** – The following additional information was added:
  - The cost of carbon is approx. \$250,000 every 18 months.
  - CORRECTION: Annual operation costs are \$25,000, not \$85,000.

# Effectiveness

## *Comment:*

- ▶ Some treatment options not highly effective and/or present technical challenges and perhaps should not have been included.

## *Response:*

- ▶ No effective technologies were excluded, because:
  - Every system and circumstance is unique (e.g. low concentrations, limited space, need to treat for multiple contaminants, etc);
  - Options may be employed singly or in combination; and
  - All options should be evaluated to arrive at the best decision.
  - The report noted limitations and considerations accordingly.

# Effectiveness

## *Comment:*

- ▶ The report did not demonstrate that GAC treatment can treat PFCs to low ppt levels.

## *Report Amendments:*

- ▶ **New Jersey American –Logan System Birch Creek:**
  - Data from the NJDEP Drinking Water PFC Database regarding this system was added.
  - The system had detections of PFNA (18 – 72 ng/L) and of PFOA (33 – 60 ng/L), in addition to three other PFCs, all of which were removed using GAC to levels below the reporting level of 5 ng/L.



# Effectiveness

## *Report Amendments: (contd.)*

- ▶ **Oakdale, MN:** The following information obtained from the Minnesota Department of Health was added.
  - Oakdale monitors for PFOA and PFOS using the minimum detection levels, of 8 ng/L and 14 ng/L, respectively.
  - Carbon is changed after PFOA levels from lead filters reach half the level in the raw water (~ every 12 – 24 mths).
  - PFOS levels are consistently maintained below the MDL.

# Effectiveness

## *Report Amendments (contd.):*

- ▶ **Amsterdam Research:** Additional detail regarding the removal of PFNA and PFOS from raw water in the Netherlands from the Eschauzier, 2012 study (already cited in the report) was added.
- ▶ **New Jersey American Water – Penns Grove:** Additional information regarding carbon type, empty-bed contact times and amount of water treated was added.

# Other Comments

## *Comment:*

- ▶ The report should address point-of-use treatment technologies

## *Report Amendment:*

- ▶ Although the DWQI makes recommendations with respect to public water systems, in response, the subcommittee added a reference to a Minnesota Department of Health report that evaluates point-of-use devices for private well owners.

# Other Report Amendment

- ▶ Included the use of alternate sources in combination with existing sources (e.g. blending) as an option.