

**PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF DRINKING WATER MANAGEMENT  
PENNSYLVANIA TREATMENT TECHNIQUE REQUIREMENTS**

## **SURFACE WATER SOURCES**

A public water supplier shall provide, as a minimum, **continuous filtration and disinfection** for surface water sources and groundwater sources under the direct influence of surface water (GUDIs). The filtration and disinfection treatment technique shall provide **at least 99.9% removal and inactivation of *Giardia lamblia* cysts, at least 99.99% removal and inactivation of enteric viruses, and at least 99% removal of *Cryptosporidium* oocysts**. Depending on source water quality conditions, additional treatment may be required as necessary to protect the public health and to meet the requirements of Chapter 109 Safe Drinking Water of the Department's Rules and Regulations. [25 Pa Code §109.202(c)(1)]

### **Turbidity Performance Standards**

For public water systems using surface water sources or GUDIs and using other than slow sand or diatomaceous earth filtration treatment technologies, the **combined filter effluent turbidity shall not exceed 0.3 NTU in 95% of the monthly samples and 1 NTU at any time**.

For public water systems using surface water sources or GUDIs and using slow sand filtration or diatomaceous earth filtration, the **combined filter effluent turbidity shall not exceed 1.0 NTU in 95% of the monthly samples and 2.0 NTU at any time**.

### **Inactivation Requirements**

The combined total effect of the disinfection processes used in a filtration plant shall achieve **at least 90% and 99.9% inactivation of *Giardia* cysts and viruses respectively** and the disinfectant residual concentration in the water delivered to the distribution system shall **not be less than .2 mg/l** for more than four hours.

## **ENHANCED COAGULATION/ENHANCED SOFTENING**

Public water systems that use surface water or groundwater sources under the direct influence of surface water and use conventional filtration treatment shall provide enhanced coagulation or enhanced softening to improve removal (optimize treatment) of disinfection byproduct precursors as measured by total organic carbon (TOC). A certain percentage of the TOC must be removed from the source water unless the system meets alternative compliance criteria. The required TOC removal percentage is based on the source water levels of the TOC and alkalinity. The alternative compliance criteria include TOC levels, disinfection byproduct levels (TTHMs and HAA5s), specific ultraviolet (UV) light absorption levels, alkalinity levels and magnesium removal levels. [25 Pa Code §109.202(g)]

## **GROUND WATER SOURCES**

Community water systems, bottled water systems, vended water systems, retail water systems and bulk water hauling systems shall provide **continuous disinfection** of groundwater sources not under the direct influence of surface water. [25 Pa Code §109.202(c)(2) and 25 Pa Code §109.1002(a)]

### **ACRYLAMIDE and EPICHLOROHYDRIN**

Public water systems using chemicals containing Acrylamide and/or Epichlorohydrin in the water treatment process shall certify that the following specified levels have not been exceeded [25 Pa Code §109.202(e)]:

- Acrylamide = 0.05% dosed at 1 mg/L (or equivalent)
- Epichlorohydrin = 0.01% dosed at 20 mg/L (or equivalent)

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### **RECYCLING OF WASTE STREAM**

Public water systems that use surface water or groundwater under the direct influence of surface water and provide conventional filtration or direct filtration treatment and recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall return these recycled flows through the processes of the system's existing conventional or direct filtration system. Any capital improvements required to modify the recycle location to comply with this requirement shall be completed by June 8, 2006. [25 Pa. Code § 109.202(h)]

### **OPTIMAL CORROSION CONTROL TREATMENT FOR LEAD AND COPPER**

**Community and nontransient noncommunity water systems** shall provide **Optimal Corrosion Control Treatment (OCCT)** which minimizes the lead and copper concentrations at the user's tap while ensuring the treatment does not cause the system to violate a Primary Maximum Contaminant Level (PMCL).

[25 Pa Code §109.1102(b)]

- A **small** ( $\leq 3,300$  population served) **or medium** (3,301 to 50,000 population served) **water system** is deemed to have optimized corrosion control treatment if the system does not exceed either the Action Level of 0.015 mg/L for lead or the Action Level of 1.3 mg/L for copper during each of two consecutive 6-month monitoring periods. [25 Pa. Code § 109.1102(b)(1)(i)]
- A **large water system** ( $> 50,000$  population served) is deemed to have optimized corrosion control if the system demonstrates to the Department that for two consecutive initial 6-month monitoring periods or during any subsequent monitoring period that the system does not exceed the Action Level of 0.015 mg/L for lead or the Action Level of 1.3 mg/L for copper **and** the difference between the 90th percentile tap water lead level and the highest source water lead concentration is less than 0.005 mg/L. [25 Pa. Code § 109.1102(b)(1)(ii)]
- Any community or nontransient noncommunity water system (large, medium or small) that installs **new or modifies existing corrosion control treatment facilities** is deemed to have optimized corrosion control if the system operates the treatment facilities in conformance with water quality parameter performance requirements specified by the Department in an operation permit. [25 Pa. Code § 109.1102(b)(1)(iii)]