

PUBLIC / PRIVATE WATER SOURCE

The safety and quality of water source utilized by a food establishment is an important aspect of food safety. The source of water can vary from municipal to well or spring water. Source water is untreated water from streams, rivers, lakes or underground aquifers, which is used to supply private wells and public drinking water. Whatever the water source is a facility needs to take precautions to assure the water is of good quality and free from harmful bacteria and other contaminants. The agency in charge of regulating the quality of water in the state of Pennsylvania is the DEP. The DEP sets strict standard for the quality of water used for human consumption.

The definition of a public water supply is a system which provides water to the public for human consumption which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. There are also several classifications for public water supply based on consumption which dictate the amount of testing and testing to be performed.

TYPES OF PUBLIC WATER SOURCES

COMMUNITY WATER SOURCE

NONTRANSIENT NON-COMMUNITY WATER SOURCE

TRANSIENT NON-COMMUNITY WATER SOURCE

A Community water source is defined a public water system which serves at least 15 service connections used by year round residents or regularly serves at least 25 year round residents. Initial testing requirements for community water sources are defined in the following charts

Initial Monitoring Requirements for MCLs (Maximum Contamination Levels) at Surface Water Source for Community Water Systems

Contaminant	Monitoring Frequency	Monitoring Location
Microbiological	Monthly based on population	Distribution system
Inorganic (IOC)	1 sample each year	Each entry point
Nitrate / Nitrite	1 sample each quarter	Each entry point
Volatile Organic (VOC)	1 sample each quarter	Each entry point
Synthetic Organic (SOC)	1 sample each quarter	Each entry point

TTHMs	4 samples each quarter	Distribution system
Radiological / Natural /Man made	Annual composite of 4 consecutive quarterly samples	Distribution system

Initial Monitoring Requirements For MCLs at Ground Water Source for Community Water Systems

Contaminant	Monitoring Frequency	Monitoring Location
Microbiological	Monthly based on population	Distribution system
Inorganic (IOC)	1 sample every 3 years	Each entry point
Nitrate / Nitrite	1 sample each year	Each entry point
Volatile Organic (VOC)	1 sample each quarter	Each entry point
Synthetic Organic (SOC)	1 sample each quarter	Each entry point
TTHMs	4 samples each quarter	Distribution system
Radiological	Annual composite of 4 consecutive quarterly samples	Distribution systems

Note – TTHMs only required for systems serving more than 10,000 persons
Radiological only required for systems serving more than 100,000 persons

A nontransient noncommunity water system is defined as a noncommunity system that regularly serves at least 25 of the same persons over 6 months per year. The following charts define initial testing requirements for nontransient non community water systems

Initial Monitoring Requirements for MCLs at Surface Water Source for Nontransient noncommunity Water System

Contaminant	Monitoring frequency	Monitoring Location
Microbiological	Monthly based on population	Distribution system
Inorganic (IOC)	1 sample each year	Each entry point
Nitrate / Nitrite	1 sample each quarter	Each entry point
Volatile Organic (VOC)	1 sample each quarter	Each entry point
Synthetic Organic (SOC)	1 sample each quarter	Each entry point

**Initial Monitoring Requirements for MCLs at Ground Water Source for
Nontransient Noncommunity Water Systems**

Contaminant	Monitoring frequency	Monitoring location
Microbiological	Based on population	Distribution System
Inorganic (IOC)	1 sample every 3 years	Each entry point
Nitrate / Nitrite	1 sample each year	Each entry point
Volatile Organic (VOC)	1 sample each quarter	Each entry point
Synthetic Organic (SOC)	1 sample each quarter	Each entry point

A Transient noncommunity water system is defined as public water system which is not a community, nontransient noncommunity, bottled or vended water system, nor a retail water facility or a bulk water hauling system. Initial monitoring requirements for this systems are defined in the following chart

**Initial Monitoring Requirements for MCLs for Transient Noncommunity Water
Systems**

Contaminant	Monitoring Frequency	Monitoring Location
Microbiological	<p>Systems using only ground water and serving 1000 or fewer persons per day each year need only collect 1 coliform sample per calendar quarter for each quarter the system provides water to public</p> <p>Systems using surface water and serving more than 1000 persons per day each year must collect samples based on the number of population served</p>	Distribution system
Nitrate / Nitrite	1 annual sample	Each entry point

Sample which are found to exceed the MCLs in any area are to be reported to DEP.

Several treatment methods are available for water systems that do not meet the minimum standards for MCLs. Some examples of treatment methods used to reduce the total microbiological counts in systems are Ultraviolet, chlorine, and ozone.

Ultraviolet (UV) water treatment systems use light wavelengths near 250 nm to alter the genetic material of microbes in such a manner that they are no longer useful for essential cellular processes. Mold, algae, bacteria, viruses, etc are all sensitive to this treatment in sufficient dose



Chlorine water treatment systems generally use a concentration of 1 ppm at the distribution center. Concentration at the end users is required to be measurable (generally .2ppm). Amount of chlorine used is greatly affected by demand, hold time and amount of disinfectant required



Example of undersink unit

Ozone

Ozone has been used in water treatment for more than 80 years. It is a powerful oxidizing agent that can reduce levels of impurities in water, including color, taste, and odor. Ozone can also be used as a disinfectant and is a good alternative to chlorine for some applications

Facilities on private water supplies can protect their source by carefully managing activities near the water source. For facilities or households using domestic wells this includes keeping contaminants away from sinkholes and the well itself. Hazardous chemicals also should be kept out of septic systems. Some precautions, which will help protect water sources, are :

- Periodically inspect exposed parts of the well for problems such as-cracked, corroded, or damaged well casing, broken or missing well cap
- Slope the area around the well to drain surface runoff away from the well
- Install a well cap or sanitary seal to prevent unauthorized use of, or entry into, the well
- Avoid mixing or using pesticides, fertilizers, herbicides or other pollutants near the well
- Do not cut off well casing below the land surface
- Pump and inspect septic system as often as recommended by your local health department
- Never dispose of hazardous materials in a septic system

