

City of Chandler
2019 DRINKING WATER QUALITY
CONSUMER CONFIDENCE REPORT
Public Water System AZ04-07-090



*Este informe contiene información muy importante sobre su agua beber.
Tradúzcalo o hable con alguien que lo entienda bien.*

Public Works & Utilities
Water Quality
Mail Stop 803
P.O. Box 4008
Chandler, AZ 85244-4008





The City of Chandler Public Works & Utilities Department is committed to providing a safe and sustainable supply of drinking water for our valued customers. Due to our strong commitment, the City of Chandler employs a team of chemists, technicians, and specialists to collect and per-

form more tests on the water served than is required by law. This report provides valuable material concerning your drinking water including information about its sources, results from water quality testing, and how to interpret the data provided.

About your Water Supply

The drinking water distributed by the City of Chandler to its customers comes from three sources:

- The Chandler Surface Water Treatment Plant (SWTP) treats and distributes water from the Salt River, Verde River, Central Arizona Project (Colorado River), and Salt River Project (SRP) wells whose water is transported to Chandler via the Consolidated Canal.
- 32 active wells supply groundwater from aquifers underlying Chandler. Groundwater is disinfected with chlorine prior to being introduced into the City's distribution system.
- The City of Chandler and the Town of Gilbert jointly own the Santan Vista Water Treatment Plant (SVWTP) located in the Town of Gilbert. This facility currently treats and distributes up to 24 million gallons per day of Colorado River water from the Central Arizona Project to each city. We have included compliance information supplied by the SVWTP. The Town of Gilbert's annual Water Quality Report can also be accessed at www.gilbertaz.gov/departments/public-works/water/reports.

City of Chandler Water Supply Statistics

- 21.2 billion gallons of drinking water were supplied to Chandler water users in 2019. (A daily average of 58.1 million gallons.)
- Chandler's SWTP produced 11.5 billion gallons, or 54.3% of the City's total drinking water.
- Groundwater wells produced 5.2 billion gallons, or 24.5% of the City's total drinking water.
- The SVWTP supplied 4.5 billion gallons, or 21.2% of the City's total drinking water.



Drinking Water and your Health

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the

EPA Safe Drinking Water Hotline at 1-800-426-4791.

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial Contaminants:** Such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife
- **Inorganic Contaminants:** Such as salts and metals that can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming
- **Pesticides and Herbicides:** Such as agriculture, urban storm water runoff, and residential uses that may come from a variety of sources
- **Organic Chemical Contaminants:** Such as synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems
- **Radioactive contaminants:** That can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The United States Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water providing the same level of protection for public health. Information on these regulations may be obtained by calling 1-888-INFO FDA (463-6332).

Who do I contact with questions about Chandler's Drinking Water?

If you have any questions about your tap water or the information in this report, please call 480-782-3654 during normal business hours (8:00 a.m. to 5:00 p.m., Monday through Friday). You can also visit our website at <https://www.chandleraz.gov/residents/water/water-quality>

Citizens who wish to address the City Council about water issues may do so at regularly scheduled City Council meetings normally held the 2nd and 4th Thursday of each month. The meetings are held at Chandler City Hall Council Chambers, 88 E. Chicago Street. For information about specific meeting times and agenda items, please contact the City Clerk's office at 480-782-2180, or visit www.chandleraz.gov/government/departments/city-clerks-office/city-council-meetings



Chandler Detected Regulated Contaminants 2018 and 2019

Radionuclides	MCL Violation Y or N	Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Alpha Emitters (pCi/L)	N	2.3	< 1.0 - 2.3	15	0	1/2019	Erosion of natural deposits
Combined Radium -226 & -228 (pCi/L)	N	0.8	< 0.6 – 0.8	5	0	10/2018	Erosion of natural deposits
Uranium (ug/L)	N	5.5	1.5 - 5.5	30	0	10/2019	Erosion of natural deposits
Inorganic Chemicals (IOC)	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Arsenic ¹ (ppb)	N	8.5	1.3 - 8.5	10	0	1/2019	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Barium (ppm)	N	0.16	0.02 - 0.16	2	2	1/2019	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	N	20	< 1.0 - 20	100	100	1/2019	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	N	1.3	0.23 - 1.3	4	4	1/2019	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate ² (ppm)	N	6.3	< 0.1 – 6.3	10	10	1/2019	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	N	4.5	<0.5 – 4.5	50	50	3/2018	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

¹ Arsenic is a mineral known to cause cancer in humans at high concentration and is linked to other health effects, such as skin damage and circulatory problems. If arsenic is less than or equal to the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water, and continues to research the health effects of low levels of arsenic.

² Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause "blue baby syndrome." Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

Synthetic Organic Chemicals (SOC)	MCL Violation Y or N	Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
2,4-D (ppb)	N	0.34	< 0.1 – 0.34	70	70	1/2019	Runoff from herbicide used on row crops
Dalapon (ppb)	N	2.1	< 1.0 – 2.1	200	200	4/2019	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) phthalate (ppb)	N	1.4	< 0.58 – 1.4	6	0	10/2018	Discharge from rubber and chemical factories

Surface Water Monitoring 2019:

Surface Water Treatment Rule	TT Violation Y or N	Lowest RAA	RAA Range (Low-High)	TT	Sample Month & Year	Likely Source of Contamination
Total Organic Carbon ¹ Removal Ratio	N	1.16	1.16-1.46	>1 RAA	5/2019	Naturally Present in the Environments
		Highest Level Detected				
Turbidity ² (NTU)	N	0.298	100%	>95%	3/2019	Soil runoff

¹ Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THM) and haloacetic acids (HAA). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

² Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. We monitor it because it is a good indicator of the quality of water. High turbidity can hinder the effectiveness of disinfectants. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Distribution System Detections 2019:

Disinfectants	MCL Violation Y or N	Running Annual Average (RAA)	Range of All Samples (Low-High)	MRDL	MRDLG	Sample Month & Year	Likely Source of Contamination
Chlorine (ppm)	N	1.03	0.13 - 2.20	4	0	12/2019	Water additive used to control microbes
Disinfection By-Products	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Haloacetic Acids (HAAs) ¹ (ppb)	N	31.5	<2 - 52	60	N/A	4/2019	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) ² (ppb)	Y	85	<0.5 - 96	80	N/A	4/2019	Byproduct of drinking water disinfection

¹Total Trihalomethanes (TTHMs) Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

²Haloacetic Acids (HAAs) Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Unregulated Contaminant Monitoring Regulation

The 1996 amendments to the Safe Drinking Water Act required the EPA to establish criteria for a program to monitor unregulated contaminants and publish a list of up to 30 contaminants to be monitored every five years. The intent of this rule is to provide baseline occurrence data that the EPA can combine with the toxicological research to make

decisions about potential future drinking water regulations. The EPA published the final rule for the Fourth Unregulated Contaminant Monitoring Regulation Cycle (UCMR4) to meet this requirement in the Federal Register on December 20, 2016; Chandler's assigned sampling period began in July 2018 and continued through July 2019. As of the end of testing, 23 of the 30 compounds were not detected in our system.

Detected Unregulated Contaminant (UCMR4):

Contaminant	Detected (Y/N)	Average	Range of All Samples (Low-High)	MRL	Likely Source of Contamination
Germanium (ppb)	Y	0.314	< 0.3 – 0.84	0.3	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese (ppb)	Y	4.177	<0.4 – 170	0.4	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
O-toluidine (ppb)	Y	0.005	<0.007 – 0.016	0.007	Used in the production of dyes, rubber, pharmaceuticals and pesticides
HAA6Br (ppb)	Y	18.42	0.73 - 44	0.2	By-product of drinking water disinfection
HAA9 (ppb)	Y	36.46	0.73 - 100	0.2	By-product of drinking water disinfection
Total Organic Carbon (ppm) SWTP Intake ¹	Y	3.3	2.2 - 4.5	0.3	Naturally Present in the Environment
Bromide (ppb) SWTP Intake ¹	Y	86.5	<5 - 180	5	Naturally-occurring compound

¹ SWTP Intake – Connection from the consolidated canal into Chandler's Surface Water Treatment Plant. The water samples had not been treated or disinfected before testing.

Some average values could be less than the low range due to substituting non-detect (<) values with zero, per the regulations governing compliance calculations.

Violation Summary (for MCL, and Reporting Requirement)

Public Notification of MCL violation for Total Trihalomethanes (TTHMs)

In May of 2019 the City of Chandler experienced an MCL violation for TTHMs in the area of Chandler Blvd and 54th St. at Site 10-A, one of the City's 12 TTHM monitoring sites. Residents in the impacted area, as shown in the map, were notified when the issue occurred and when it was resolved in July of 2019.

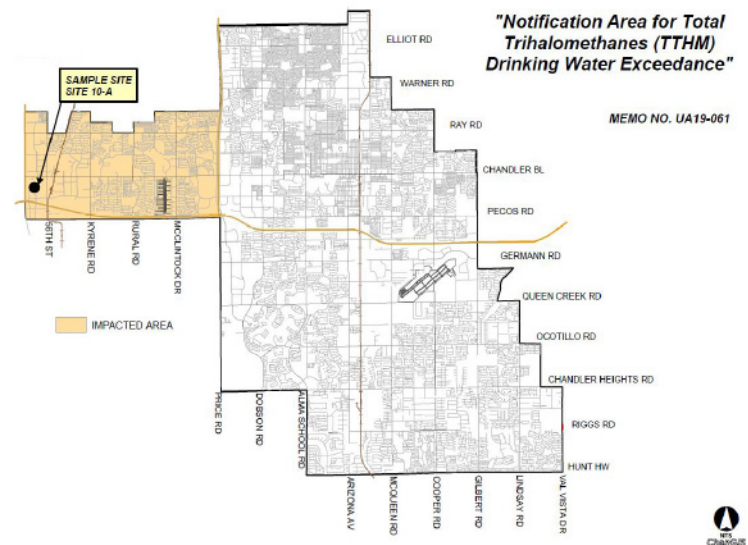
TTHMs are formed when naturally occurring organic material in the water reacts with chlorine used as a microbial disinfectant. The EPA defines the standard for TTHMs at 80 ppb, and determines compliance based on an average of all quarterly samples taken over the previous 12 months.

Chandler implemented a number of ongoing strategies to address the issue and ensure compliance system wide moving forward.

Measures include:

- Using groundwater wells to blend TTHM-free water into the entire system
- Operational changes at the surrounding water reservoirs
- Chemical adjustments at the SWTP
- Additional monitoring for TTHM at multiple locations in Chandler

These measures reduced TTHM levels at Site 10-A and throughout the system.



Public Notification of failure to report Volatile Organic Compound (VOC) results on time

The City of Chandler is required to report analytical results for the monitoring and reporting schedules established by the Safe Drinking Water Act. The results from VOC sampling at one of the City's well sites, conducted during the second quarter of 2018, were incompletely reported. The City was returned to compliance once the missing information was provided. As the data reported no detections of VOC's at the well site, Chandler has no reason to believe that the late reporting had any impact on public health. The electronic submittals of the City's results are being more closely reviewed to ensure the regulatory agencies receive timely and complete reports.

Lead and Copper Study 2019:

Lead & Copper	MCL Violation Y or N	90th Percentile	Number of Samples Exceeds AL	AL	ALG	Sample Month & Year	Likely Source of Contamination
Copper (ppm)	N	0.16	0	1.3	1.3	9/2019	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	N	2.5	0	15	0	9/2019	Corrosion of household plumbing systems; erosion of natural deposits

Lead and Copper Testing

Federal regulations require all cities to test for lead and copper at selected customer's taps at least once every three years. The City of Chandler conducted lead and copper tap sampling in the summer of 2019, with the concentrations of lead and copper well below regulatory limits. The next round of lead and copper sampling will be in 2022.

Lead, in drinking water, is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health prob-

lems, especially for pregnant women and young children. The City of Chandler is responsible for providing high quality drinking water, but cannot control the variety of materials used in household plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at www.epa.gov/safewater/lead

Protecting Chandler's Water Supply

Source Water Assessment and Protection Program (SWAP)

The Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for drinking water wells and surface water sources for Chandler's public water system in 2005. The assessment reviewed adjacent land uses that may pose a potential risk to water sources. These risks include, but are not limited to, gas stations, landfills, dry cleaners, agriculture fields, wastewater treatment plants, and mining activities. Once ADEQ identified the adjacent land uses, they were ranked on their potential to affect the water source.

All surface water sources are considered high risk due to their exposure to open air. The overall risk posed to surface water is addressed by EPA through its increased monitoring requirements for surface water sources.

Two of Chandler's drinking water wells were considered high risk based on adjacent land use criteria. The Chandler public water system conducts regular monitoring of drinking water entering the distribution system from all wells to ensure land uses have not impacted the source water.

Based on the information currently available on the hydrogeological settings and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water system, ADEQ has given a high risk designation for the degree to which this public water system drinking water source(s) are protected. A designation of high risk indicates there may be additional source water protection measures which can be implemented on the local level. This does not imply that the source water is contaminated nor does it mean that contamination is imminent. Rather, it simply states that land use activities or hydrogeological conditions exist that make the source water susceptible to possible future contamination.

Further source water assessment documentation can be obtained by contacting ADEQ at 602-771-2300 or visiting their website at www.azdeq.gov/source-water-protection

Backflow Prevention

The City of Chandler prevents contamination of the public water supply by requiring the installation, maintenance and inspection of thousands of backflow devices throughout the City. These devices ensure hazards originating on customer's property and from temporary connections do not impair or alter the water in the City's distribution system. Backflow prevention devices range from vacuum breakers on household hose bibs to large commercial reduced-pressure principal devices..



Storm Water Pollution Prevention Tips

"Be the solution to storm water pollution" – common storm water pollutants include sediment, motor oil and other vehicle fluids, pet waste, yard debris, metals, pesticides, fertilizers and herbicides, to name a few. For more information on storm water pollution prevention, please go to www.chandleraz.gov and search "stormwater".

Guidelines for Everyday Pollution Prevention – "Only Rain In the Storm Drain"

- Sweep yard debris and properly dispose of in the trash, rather than blowing or hosing into the street.
- Contain pool or spa water on private property or dispose of it in the sanitary sewer cleanout associated with your home. Draining pool water into the street or other City right-of-way is prohibited by City Code. For more information call 480-782-3507 or search "pool drainage" at www.chandleraz.gov.
- Use fertilizers and pesticides sparingly and as directed by the manufacturer.
- Pick up after your pet and properly dispose of the waste in the trash.
- Wash your car on a lawn or other unpaved surface, or use a commercial car wash.
- Always use a nozzle on your garden hose around the home. Do not let the water free flow into the street.
- Maintain vehicles to be free of leaks and do not park leaking vehicles on the street.
- Do not over-water your lawn.
- Report illegal dumping into streets and storm drains by calling 480-782-3503 or at www.chandleraz.gov.
- Minimize your purchase and use of hazardous products. Dispose of unused quantities properly. Please contact Solid Waste Services at 480-782-3510 for proper disposal guidelines of hazardous waste materials such as used motor oil and other similar fluids.



Taste, Odor and Hardness

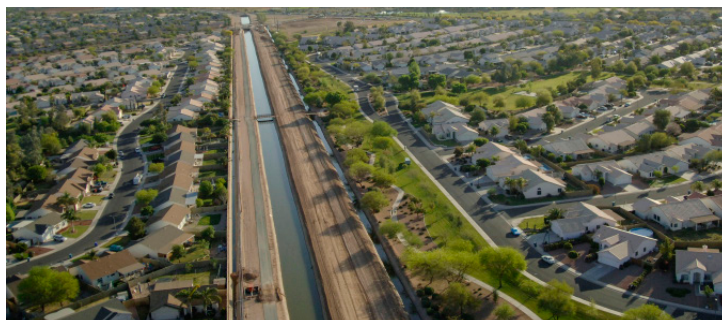
The EPA's National Secondary Drinking Water Regulations are non-enforceable guidelines on contaminants that may cause cosmetic or aesthetic effects in drinking water. These effects include flavor, color, odor and hardness, all of which are harmless, but some consumers may find disagreeable. The adjacent table shows data on substances and characteristics that are frequently asked about by Chandler residents.

Seasonal Changes in Flavor

The flavor of Chandler's drinking water may change at certain times of the year, depending on the source. Chandler works with SRP to minimize algae in the canal system and to provide treatment at the SWTP to reduce off-flavors and odors.

Arizona State University and the City of Chandler have partnered to routinely monitor for taste and odor precursors in the Consolidated Canal. This allows the treatment plant to have more precise control over taste and odor events and to better utilize resources and manage cost.

Substance	Guideline	Range of Results (low – high)
Alkalinity (ppm)	NA	74 - 205
Iron (ppm)	0.3 mg/L	0.10 – 0.93
pH	6.5 – 8.5	7.2 – 8.3
Temperature (°F)	NA	53.6 - 104
Total Dissolved Solids (ppm)	500 mg/L	215 - 1510
Total Hardness (ppm; grains/gallon)	NA	108 – 559 mg/L / 2–9 gpg



Santan Vista System Compliance Data 2019:

Inorganic Chemicals (IOC)	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Nitrate (ppm)	N	6.3	< 0.1 – 6.3	10	10	10/2019	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Synthetic Organic Chemicals (SOC)	MCL Violation Y or N	Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
2,4-D (ppb)	N	0.34	< 0.1 – 0.34	70	70	10/2019	Runoff from herbicide used on row crops
Disinfection By-Products	MCL Violation Y or N	Running Annual Average (RAA) OR Highest Level Detected	Range of All Samples (Low-High)	MCL	MCLG	Sample Month & Year	Likely Source of Contamination
Bromate (ppb)	N	5	1.4 - 12	10	N/A	12/2019	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	N	12	12	80	N/A	1/2019	Byproduct of drinking water disinfection
Surface Water Treatment Rule	TT Violation Y or N	Average	Range of All Samples (Low-High)	TT	MCLG	Sample Month & Year	
Total Organic Carbon Removal Ratio % Removal	N	18.85	11.10 – 26.50	15% - 25%	N/A	12/2019	Naturally Present in the Environment

If you have questions or would like more information, visit www.chandleraz.gov/waterquality, or call (480) 782-3654 Monday through Friday 8 a.m. – 5 p.m., or mail your inquiry to City of Chandler, Mail Stop 803, P.O. Box 4008, Chandler, AZ 85244-4008.

Definitions:

Action Level (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health

Maximum Residual Disinfectant Level (MRDL): The level of disinfectant added for water treatment that may not be exceeded at the consumer's tap

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant added for treatment at which no known or anticipated adverse effect on health of persons would occur

Minimum Reporting Limit (MRL): The smallest measured con-

centration of a substance that can be reliably measured by a given analytical method

Nephelometric Turbidity Units (NTU): A measure of water clarity

Non-Applicable (N/A): Sampling was not completed by regulation or was not required

ppm: Parts per million or Milligrams per liter (mg/L). One ppm is equivalent to one gallon in one million gallons.

ppb: Parts per billion or Micrograms per liter (µg/L). One ppb is one thousand times smaller than a ppm.

Picocuries per liter (pCi/L): Measure of the radioactivity in water

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water