Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

City of Perris Annual Water Quality 2022 Consumer Confidence Report

ABOUT THIS REPORT

The City of Perris is proud to provide its 2022 Water Quality Report, which contains valuable information about the quality of its drinking water and the efforts made to continue providing the highest quality water to the community it serves. **In 2022, The City of Perris drinking water met all drinking water health standards of the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Water Board).**

Contact Information.
For any questions regarding this report please contact
Bryant K. Hill, Director of Public Works
951-657-3280

The City of Perris encourages public participation in decisions that may affect the quality of the water supply. The City Council meets every second Tuesday and the last Tuesday of each month. Questions for the City Council can be presented to the City Administrative Department. Call (951) 943-6100.
Este **informe contiene informacion importante con respecto a su calidad del agua. Si usted desea obtener informacion en espanol, visitenos en www.cityofperris.org o llame (951) 956-2120.**

The USEPA, the State Water Board and the California Public Utilities Commission (CPUC) are the agencies responsible for establishing drinking water quality standards. The drinking water delivered to your homes and businesses meets standards established by all three agencies. The City of Perris uses independent, state-certified water quality laboratories for testing. In some cases, the City goes beyond what is required to monitor for constituents that have known health risks. Unregulated contaminant monitoring helps USEPA determine where certain contaminants occur and whether it needs to regulate those contaminants.

This year's report, which contains water quality and supply information for 2022 complies with the regulations of the 1996 Safe Drinking Water Act reauthorization that charges USEPA with updating and strengthening the tap water regulatory program.

SOURCES OF WATER SUPPLY

Water supplied to The City of Perris comes from both ground and surface water and is supplied by the Eastern Municipal Water District (EMWD).

The 2022 Consumer Confidence Report for EMWD water supplied to the City of Perris can be obtained by calling (951) 928-3777 Ext 6337 or at www.emwd.org

The blended water quality and any contaminant levels found to be present are also listed in this report for contaminants which are of the most health risk.

In general, 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*, that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- *Radioactive contaminants* that can be naturally occurring or the result of oil and gas production and mining activities.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling USEPA's Safe Drinking Water Hotline (1-800-426-4791).

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. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

To ensure that tap water is safe to drink, USEPA and the State Water Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Additional information on bottled water is available on the California Department of Public Health website (https://www.cdph.ca.gov/Programs/CEH/DFDCS/Pages/F DBPrograms/FoodSafetyProgram/Water.aspx).

WATER QUALITY MONITORING

The City of Perris routinely monitors for contaminants in its drinking water in accordance with Federal and State laws. To minimize the presence of harmful bacteria or other pathogens, the City of Perris is also required to continuously monitor the disinfection levels in the water system. The disinfection levels of the water system are checked daily to ensure the quality of the water. Bacteria, which may indicate potential health risks, are monitored weekly. Over 150 bacteria tests were conducted during 2022, with one month that exceeded limits with TWO Total Coliform Positive samples in the month of March. During 2022, there were NO violations of any Federal or State water quality standards.

Results of monitoring for the period of January 1 to December 31, 2022, are identified in the tables located on the following pages. These tables contain chemicals and constituents that have primary MCLs. The following definitions are provided for terms and abbreviations contained in the tables that might be unfamiliar.

ACRONYMS AND ABBREVIATIONS

- ***AL = Regulatory Action Level:*** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ***MCL = Maximum Contaminant Level:*** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.
- ***MCLG = Maximum Contaminant Level Goal:*** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by USEPA.
- ***MRDL = Maximum Residual Disinfection Level:*** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ***MRDLG = Maximum Residual Disinfection Level Goal:*** The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by USEPA. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ***N/A = Not Applicable:*** Monitoring requirements may vary between sources.
- ***ND = Not Detected:*** Laboratory analysis indicates that the constituent is not present at detectable levels.
- ***NM = Not Monitored:*** The source was not monitored for the constituent.
- ***NS = No Standard:*** No existing federal or state drinking water standard has been established.
- ***NTU = Nephelometric Turbidity Units***
- ***PDWS = Primary Drinking Water Standard***: MCLs or MRDLs for contaminants that affect health, along with their monitoring and reporting requirements and water treatment requirements.
- ***PHG*** = Public Health Goal- The level of a contaminant in drinking water below which there is no known or expected health risk PHGs are set by the California Environmental Protection Agency.
- **pCi/L** = picocuries per liter (a measure of radioactivity)
- **ppb** = parts per billion, or micrograms per liter (μg/L)
- **ppm** = parts per million, or milligrams per liter (mg/L)
- **ppq** = parts per quadrillion, or picograms per liter
- **ppt** = parts per trillion, or nanograms per liter
- **RAA** = running annual average
- **LRAA** = locational running annual average
- **TT** = Treatment Technique

Additional Information Fluoride

All drinking water naturally contains some fluoride. Community water fluoridation is the process of adjusting the naturally occurring fluoride level to the optimum level for preventing tooth decay. Fluoride levels in drinking water are limited under California state regulations at a maximum level of 2.0 parts per million (ppm).

The City of Perris receives its water from the Eastern Municipal Water District. EMWD adds Fluoride levels to the water that are below the regulation limit and are within the optimal range of 0.7 to 0.8 ppm.

WATER QUALITY TABLES AND ATTACHED DATA

The first column of each water quality table that follows lists the chemical/ constituent detected in the water. The next columns list the average concentration and range of concentrations of the detected chemical. All chemicals and constituents were monitored from either the EMWD Supply or from the City of Perris water distribution system during 2022.

Included in the tables are the PHG (or MCLG, if applicable) established for each chemical/constituent. The last two columns describe the likely source(s) of each contaminant detected in the drinking water and any health effects.

Also attached is the Eastern Municipal Water Quality Data for testing at various water treatment sites that may contribute to your supplied water.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Perris is responsible for providing high quality drinking water but cannot control the variety of materials used in 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. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/lead.

E. Coli in Drinking Water

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterbourne pathogens may be present or that a potential pathway exists though which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

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MONITORING REQUIREMENTS NOT MET FOR
CITY OF PERRIS WATER SYSTEM

Our water system failed to monitor as required for drinking water standards during the past year and, therefore, was in violation of the regulations. Even though this failure was not an emergency, as our customers you have a right to know what you should do, what happened, and what we did to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are in indicator of whether or not our drinking water meets health standards. During January - November 2022, we failed to conduct required samples for Total Coliform Bacteria and therefore, cannot be sure of the quality of our drinking water during that time.

What Should I Do?

There is nothing you need to do at this time. The table below lists the contaminate(s) we did not properly test for during the last year, how many samples we are required to take and how often, how many samples we took, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Total Coliform Bacteria
Required Sampling Frequency	3 per week, January - November 2022 (81 required)
Number of Samples Taken	40
Dates Samples Should Have Been Taken	Janaury - November 2022
When Samples Were or Will Be Taken	November 30, 2022

If you have health issues concerning the consumption of this water you may wish to consult your doctor.

What Happened? What is Being Done?

An employee of a contracted service to the City of Perris did not complete all of the required sampling for the Total Coliform Bacteria Testing. All contracted staff have been given further training on sampling responsibilities. Sampling schedule was reestablished on November 30th, 2022. For more information please contact Bryant K. Hill at 951-657-3280 or 1015 South G Street Perris, CA 92570.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Primary Standards – Mandatory Health Related Standards – Regulated Contaminants

Table 1.

Microbiological Contaminants						
Chemical or Constituent (reporting units)	**MCL (AL)**	**PHG (MCLG)**	**EMWD Supply Highest # of positive samples**	**City of Perris System Highest # of positive samples**	**Major Sources in Drinking Water**	**Health Effects Language**
Total Coliform Bacteria (number of positive samples in any one month) (State Total Coliform Rule)	No more than 1 positive sample in a month	(0)	0	2*	Naturally present in the environment	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.
Fecal Coliform and *E. coli (number of positive samples during the year. (State Total Coliform Rule)*	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or E. coli positive	(0)	0	1	Human and animal fecal waste	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.
E. coli (Federal Revised Total Coliform Rule)	(a)	0	0 (from 1/1/22-12/31/22)	1 (from 1/1/22-12/31/22)	Human and animal fecal waste	E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.

* In the month of March, two routine samples were reported as TC positive and one sample was E.coli positive triggering a Level I Assessment which conducted and completed within 30 days. Sample found to have been taken during windy conditions that may have contaminated the sample. City has updated sample collection policy and provided training to all staff. No physical sanitary defects were found.

(a) Routine and repeat samples are total coliform-positive, and either is E. coli-positive, or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli.

Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproducts Precursors

Chemical or Constituent (reporting units)	MCL (AL) [MRDL]	PHG (MCLG) [MRDLG]	City of Perris System		Major Sources in Drinking Water	Health Effects Language
			Range	Highest LRAA		
Total Trihalomethanes (TTHMs) (ppb)	80	N/A	15.7-30.7	24.5	By-product of drinking water chlorination	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney or central nervous system problems, and may have an increased risk of getting cancer.
Haloacetic Acids (HAA5s) (ppb)	60	N/A	1.0-10.2	9.1	By-product of drinking water chlorination	Some people who drink water containing halocetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Total Chlorine Residual (ppm)	**[MRDL]** [4 as Cl2]	**MRDLG** [4 as Cl2]	1.16-2.02	1.715	Drinking water disinfectant added for treatment	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Inorganic Chemicals

Chemical or Constituent (reporting units)	MCL (AL)	PHG (MCLG)	City of Perris System		Major Sources in Drinking Water	Health Effects Language
			Range	Average		
Fluoride (ppm) Treatment Related	2	1	0.4- 0.9	0.7	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth.

Table 2. Lead and Copper (Testing is completed at Customers Taps)

Chemical or Constituent (reporting units)	MCL (AL)	PHG (MCLG)	City of Perris System		Major Sources in Drinking Water	Health Effects Language
			90th Percentile	# of samples >AL		
Lead (ppb) August 2021 Sampling	AL= 15	2	ND	0	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure.
Copper (ppb) August 2021 Sampling.	AL=1300	300	740	0	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Table 3. Regulated Contaminants with Secondary MCLs and Other Parameters

Chemical or Constituent (reporting units)	MCL (Secondary MCL)	PHG (MCLG)	City of Perris System		Major Sources in Drinking Water	Health Effects Language There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.
			Range	Average		
Odor Threshold (units)	(3)	NA	1	1	Naturally occurring organic materials	N/A
Turbidity (NTU)	(5)	NA	ND-0.74	0.12	Soil Runoff	Turbidity has no health effects. However, high levels of 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.

2022 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California
Treatment Plant Effluents and Distribution System (PWS ID: 1910087)

Parameter		Units	State (Federal) MCL	PHG	State DLR/CCRDL (RL)	Range Average	Mills Plant	Distribution System	Major Sources in Drinking Water
Percent State Water Project		%	NA	NA	NA	Range	100		NA
PRIMARY									
CLARITY									
Combined Filter Effluent (CFE) Turbidity	(a)	NTU %	TT	NA	NA	Highest % ≤ 0.3	0.06 100		Soil runoff
MICROBIOLOGICAL	**(b)**								
Total Coliform Bacteria	(c)	% Positive Monthly Samples	5.0	MCLG = 0	NA	Range Average	0	0 - 0.3 0.04	Naturally present in the environment
Escherichia coli (E. coli)	(d)	Number	0	MCLG = 0	NA	Number of Positive Samples	0	0	Human and animal fecal waste
Heterotrophic Plate Count (HPC) Bacteria	(e)	CFU/mL	TT	NA	(1)	Median Median	ND		Naturally present in the environment
Cryptosporidium		oocysts/200 L	TT	MCLG = 0	(1)	Range Average	ND		Human and animal fecal waste
Giardia		cysts/200 L	TT	MCLG = 0	(1)	Range Average	ND		Human and animal fecal waste
ORGANIC CHEMICALS									
Synthetic Organic Compounds	***(f)***								
1,2,3-Trichloropropane (1,2,3-TCP)		ppt	5	0.7	5	Range Average	ND		Discharge from industrial and agrichemical factories; byproduct of producing other compounds and pesticides; leaching from hazardous waste sites
2,4,5-TP (Silvex)		ppb	50	3	1	Range Average	ND		Residue of banned herbicide
2,4-D		ppb	70	20	10	Range Average	ND		Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Acrylamide	(g)	ppm	TT	MCLG = 0	NA	Range Average	NA		Water treatment chemical impurities
Alachlor		ppb	2	4	1	Range Average	ND		Runoff from herbicide used on row crops

Atrazine	ppb	1	0.15	0.5	Range Average	ND		Runoff from herbicide used on row crops and along railroad and highway right-of-ways
Bentazon	ppb	18	200	2	Range Average	ND		Runoff/leaching from herbicide used on beans, peppers, corn, peanuts, rice, and ornamental grasses
Benzo(a)pyrene	ppt	200	7	100	Range Average	ND		Leaching from linings and coatings of water storage tanks and distribution mains
Carbofuran	ppb	18	0.7	5	Range Average	ND		Leaching of soil fumigant used on rice, alfalfa, and grape vineyards
Chlordane	ppt	100	30	100	Range Average	ND		Residue of banned insecticide
Dalapon	ppb	200	790	10	Range Average	ND		Runoff from herbicide used on right-of-ways, and crops and landscape maintenance
Di(2-ethylhexyl)adipate	ppb	400	200	5	Range Average	ND		Discharge from chemical factories
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Range Average	ND		Discharge from rubber and chemical factory; inert ingredient in pesticides
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range Average	ND		Banned nematocide that may still be present in soils due to runoff/leaching
Dinoseb	ppb	7	14	2	Range Average	ND		Runoff from herbicide used on soybeans, vegetables, and fruits
Dioxin (2,3,7,8-TCDD)	ppq	30	0.05	5	Range Average	ND		Waste incineration emissions; chemical factory discharge
Diquat	ppb	20	6	4	Range Average	ND		Runoff from herbicide used for terrestrial and aquatic weeds
Endothall	ppb	100	94	45	Range Average	ND		Runoff from herbicide used for terrestrial and aquatic weeds; defoliant
Endrin	ppb	2	0.3	0.1	Range Average	ND		Residue of banned insecticide and rodenticide
Epichlorohydrin (g)	ppm	TT	MCLG = 0	NA	Range Average	NA		Water treatment chemical impurities
Ethylene Dibromide (EDB)	ppt	50	10	20	Range Average	ND		Petroleum refinery discharges; underground gas tank leaks; banned nematocide that may still be present in soils due to runoff and leaching
Glyphosate	ppb	700	900	25	Range Average	ND		Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range Average	ND		Residue of banned insecticide

Heptachlor Epoxide	ppt	10	6	10	Range Average	ND		Breakdown product of heptachlor
Hexachlorobenzene	ppb	1	0.03	0.5	Range Average	ND		Discharge from metal refineries and agrichemicals factories; wastewater chlorination reaction byproduct
Hexachlorocyclopentadiene	ppb	50	2	1	Range Average	ND		Discharge from chemical factories
Lindane	ppt	200	32	200	Range Average	ND		Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range Average	ND		Runoff/leaching from insecticide uses on fruits, vegetables, alfalfa, and livestock
Molinate (Ordram)	ppb	20	1	2	Range Average	ND		Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range Average	ND		Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range Average	ND		Discharge from wood preserving factories, and other insecticidal and herbicidal uses
Picloram	ppb	500	166	1	Range Average	ND		Herbicide runoff
Polychlorinated Biphenyls (PCBs)	ppt	500	90	500	Range Average	ND		Runoff from landfills; discharge of waste chemicals
Simazine	ppb	4	4	1	Range Average	ND		Herbicide runoff
Thiobencarb	ppb	70	42	1	Range Average	ND		Runoff/leaching from herbicide used on rice
Toxaphene	ppb	3	0.03	1	Range Average	ND		Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Compounds								
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Range Average	ND		Metal degreasing site discharge; manufacture of food wrappings
1,1,2,2-Tetrachloroethane	ppb	1	0.1	0.5	Range Average	ND		Discharge from industrial and agrichemical factories; solvent used in production of TCE, pesticides, varnish, and lacquers
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Range Average	ND		Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Range Average	ND		Discharge from industrial chemical factories
1,1-Dichloroethane	ppb	5	3	0.5	Range Average	ND		Extraction and degreasing solvent; fumigant

1,1-Dichloroethylene	ppb	6	10	0.5	Range Average	ND		Discharge from industrial chemical factories
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Range Average	ND		Discharge from textile-finishing factories
1,2-Dichlorobenzene	ppb	600	600	0.5	Range Average	ND		Discharge from industrial chemical factories
1,2-Dichloroethane	ppt	500	400	500	Range Average	ND		Discharge from industrial chemical factories
1,2-Dichloropropane	ppb	5	0.5	0.5	Range Average	ND		Industrial chemical factory discharge; primary component of some fumigants
1,3-Dichloropropene	ppt	500	200	500	Range Average	ND		Runoff/leaching from nematocide used on croplands
1,4-Dichlorobenzene	ppb	5	6	0.5	Range Average	ND		Discharge from industrial chemical factories
Benzene	ppb	1	0.15	0.5	Range Average	ND		Plastics factory discharge; gas tanks and landfill leaching
Carbon Tetrachloride	ppt	500	100	500	Range Average	ND		Discharge from chemical plants and other industrial waste
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range Average	ND		Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range Average	ND		Discharge from pharmaceutical and chemical factories; insecticide
Ethylbenzene	ppb	300	300	0.5	Range Average	ND		Petroleum refinery discharge; industrial chemical factories
Methyl-*tert*-butyl ether (MTBE)	ppb	13	13	3	Range Average	ND		Gasoline discharge from watercraft engines
Monochlorobenzene	ppb	70	70	0.5	Range Average	ND		Discharge from industrial and agrichemical factories, and dry cleaners
Styrene	ppb	100	0.5	0.5	Range Average	ND		Rubber and plastics factories discharge; landfill leaching
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range Average	ND		Discharge from factories, dry cleaners, and auto shops
Toluene	ppb	150	150	0.5	Range Average	ND		Discharge from petroleum and chemical refineries
trans-1,2-Dichloroethylene	ppb	10	60	0.5	Range Average	ND		Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Range Average	ND		Discharge from metal degreasing sites and other factories

Trichlorofluoromethane (Freon-11)	ppb	150	1,300	5	Range Average	ND		Industrial factory discharge; degreasing solvent; propellant and refrigerant
Vinyl Chloride	ppt	500	50	500	Range Average	ND		Leaching from PVC piping; plastic factory discharge; byproduct of TCE and PCE biodegradation
Xylenes, Total	ppm	1.750	1.8	0.0005	Range Average	ND		Discharge from petroleum and chemical refineries; fuel solvent
INORGANIC CHEMICALS								
Aluminum (h)	ppb	1,000	600	50	Range Highest	ND - 150 60		Residue from water treatment process; runoff and leaching from natural deposits
Antimony	ppb	6	1	6	Range Average	ND		Petroleum refinery discharges; fire retardants; solder; electronics
Arsenic	ppb	10	0.004	2	Range Average	ND		Natural deposits erosion, glass and electronics production wastes
Asbestos (i)	MFL	7	7	0.2	Range Average	ND		Asbestos cement pipes internal corrosion; runoff and leaching from natural deposits
Barium	ppb	1,000	2,000	100	Range Average	ND		Oil and metal refineries discharge; natural deposits erosion
Beryllium	ppb	4	1	1	Range Average	ND		Discharge from metal refineries, aerospace, and defense industries
Cadmium	ppb	5	0.04	1	Range Average	ND		Internal corrosion of galvanized pipes; discharge from electroplating, industrial factories, and metal refineries; runoff from waste batteries and paints; natural deposits erosion
Chromium	ppb	50	MCLG = 100	10	Range Average	ND		Discharge from steel and pulp mills; natural deposits erosion
Copper (j)	ppm	AL = 1.3	0.3	0.05	Range Average	ND		Internal corrosion of household pipes; runoff/leaching from natural deposits; wood preservatives leaching
Cyanide	ppb	150	150	100	Range Average	ND		Discharge from steel/metal, plastic, and fertilizer factories
Fluoride (k)	ppm	2.0	1	0.1	Range Average	0.6 - 0.8 0.7	0.4 - 0.9 0.7	Runoff and leaching from natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Lead (j)	ppb	AL = 15	0.2	5	Range Average	ND		Internal corrosion of household water plumbing systems; industrial manufacturers' discharge; runoff and leaching from natural deposits

Mercury	ppb	2	1.2	1	Range Average	ND		Erosion of natural deposits; factory discharge; landfill runoff
Nickel	ppb	100	12	10	Range Average	ND		Erosion of natural deposits; discharge from metal factories
Nitrate (as Nitrogen)	ppm	10	10	0.4	Range Average	ND		Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
Nitrite (as Nitrogen)	ppm	1	1	0.4	Range Average	ND		Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
Perchlorate	ppb	6	1	2	Range Average	ND		Naturally occurring in arid regions; industrial waste discharge
Selenium	ppb	50	30	5	Range Average	ND		Refineries, mines, and chemical waste discharge; runoff from livestock lots
Thallium	ppb	2	0.1	1	Range Average	ND		Leaching from ore processing; discharge from electronics, glass, and pharmaceutical factories
RADIOLOGICALS (l)								
Gross Alpha Particle Activity	pCi/L	15	MCLG = 0	3	Range Average	ND - 4 ND		Runoff/leaching from natural deposits
Gross Beta Particle Activity	pCi/L	50	MCLG = 0	4	Range Average	ND - 6 4		Decay of natural and man-made deposits
Radium-226	pCi/L	NA	0.05	1	Range Average	ND		Erosion of natural deposits
Radium-228	pCi/L	NA	0.019	1	Range Average	ND		Erosion of natural deposits
Combined Radium-226 + 228	pCi/L	5	MCLG = 0	2	Range Average	ND		Erosion of natural deposits
Strontium-90	pCi/L	8	0.35	2	Range Average	ND		Decay of natural and man-made deposits
Tritium	pCi/L	20,000	400	1,000	Range Average	ND		Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	Range Average	ND - 2 ND		Erosion of natural deposits
DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS (m)								
Total Trihalomethanes (TTHM) (Plant Core Locations and Distribution System) (n)	ppb	80	NA	4.0	Range Highest LRAA	11 - 21 22	11 - 42 34	

Bromodichloromethane			0.06	1.0				Byproducts of drinking water chlorination
Bromoform			0.5	1.0				
Chloroform			0.4	1.0				
Dibromochloromethane			0.1	1.0				
Sum of Five Haloacetic Acids (HAA5) (Plant Core Locations and Distribution System)	ppb	60	NA	6.0	Range Highest LRAA	ND	ND - 15 9.6	Byproduct of drinking water chlorination
Total Chlorine Residual (x)	ppm	MRDL = 4.0	MRDLG = 4.	(0.05)	Range Highest		0.4 - 2.9 2.5	Drinking water disinfectant added for treatment
Bromate	ppb	10	0.1	1.0	Range Highest	ND - 14 5.5		Byproduct of drinking water ozonation
Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Range Highest RAA	1.7 - 2.2 1.9		Various natural and man-made sources; TOC is a precursor for the formation of disinfection byproducts
SECONDARY								
Aluminum (h)	ppb	200	600	50	Range Highest	ND - 150 60		Residue from water treatment process; runoff and leaching from natural deposits
Chloride	ppm	500	NA	(2)	Range Average	76 - 77 76		Runoff/leaching from natural deposits; seawater influence
Color	Color Units	15	NA	(1)	Range Average	1		Naturally-occurring organic materials
Copper (j)	ppm	1.0	0.3	0.05	Range Average	ND		Internal corrosion of household pipes; runoff/leaching from natural deposits; wood preservatives leaching
Foaming Agents - Methylene Blue Active Substances (MBAS)	ppb	500	NA	(50)	Range Average	ND		Municipal and industrial waste discharges
Iron	ppb	300	NA	100	Range Average	ND		Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NL = 500	20	Range Average	ND		Leaching from natural deposits
MTBE	ppb	5	13	3	Range Average	ND		Gasoline discharge from watercraft engines
Odor Threshold	TON	3	NA	1	Range Average	2		Naturally-occurring organic materials
Silver	ppb	100	NA	10	Range Average	ND		Industrial discharges

Specific Conductance	µS/cm	1,600	NA	NA	Range	522 - 546		Substances that form ions in water; seawater influence
					Average	534		
Sulfate	ppm	500	NA	0.5	Range	56 - 57		Runoff/leaching from natural deposits; industrial wastes
					Average	56		
Thiobencarb	ppb	1	42	1	Range	ND		Runoff/leaching from rice herbicide
					Average			
Total Dissolved Solids, Filterable (TDS) (o)	ppm	1,000	NA	(2)	Range	289 - 304		Runoff/leaching from natural deposits
					Average	296		
Turbidity	NTU	5	NA	0.1	Range	ND		Soil runoff
					Average			
Zinc	ppm	5.0	NA	0.05	Range	ND		Runoff/leaching from natural deposits; industrial wastes
					Average			
OTHER PARAMETERS								
General Minerals								
Alkalinity, Total (as $CaCO_3$)	ppm	NA	NA	(1)	Range	83 - 89		Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate
					Average	86		
Calcium	ppm	NA	NA	(0.1)	Range	25 - 28		Runoff/leaching from natural deposits
					Average	26		
Hardness, Total (as $CaCO_3$)	ppm	NA	NA	(1)	Range	115 - 120		Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water
					Average	118		
Magnesium	ppm	NA	NA	(0.01)	Range	12 - 13		Runoff/leaching from natural deposits
					Average	12		
Potassium	ppm	NA	NA	(0.2)	Range	3.6 - 3.8		Salt present in the water; naturally-occurring
					Average	3.7		
Sodium	ppm	NA	NA	(1)	Range	60 - 61		Salt present in the water; naturally-occurring
					Average	60		
Unregulated Contaminants								
Boron	ppb	NL = 1,0	NA	100	Range	160		Runoff/leaching from natural deposits; industrial wastes
					Average			
Chlorate	ppb	NL = 80(	NA	20	Range	200		Byproduct of drinking water chlorination; industrial processes
					Average			
Chromium VI	ppb	NA	0.02	1	Range	ND		Runoff/leaching from natural deposits; discharge from industrial wastes
					Average			
Vanadium	ppb	NL = 50	NA	3	Range	ND		Naturally-occurring; industrial waste discharge
					Average			
Dichlorodifluoromethane (Freon-12)	ppb	NL = 1,0	NA	0.5	Range	ND		Industrial waste discharge
					Average			

Ethyl-*tert*-butyl ether (ETBE)	ppb	NA	NA	3	Range Average	ND		Used as gasoline additive
tert-Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range Average	ND		Used as gasoline additive
tert-Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Range Average	ND		MTBE breakdown product; used as gasoline additive
Nitrosamine Compounds								
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	(2)	Range Average	4.4	ND - 3.3 ND	Byproducts of drinking water chloramination; industrial processes
N-Nitrosodiethylamine (NDEA)	ppt	NL = 10	NA	(2)	Range Average	ND	ND	
N-Nitrosodi-n-propylamine (NDPA)	ppt	NL = 10	NA	(2)	Range Average	ND	ND	
N-Nitrosomethylethylamine (NMEA)	ppt	NA	NA	(2)	Range Average	ND	ND	
N-Nitrosodi-n-butylamine (NDBA)	ppt	NA	NA	(2)	Range Average	ND	ND	
N-Nitrosopyrollidine (NPYR)	ppt	NA	NA	(2)	Range Average	ND	ND	
N-Nitrosopiperidine (NPIP)	ppt	NA	NA	(2)	Range Average	ND	ND	
N-Nitrosomorpholine (NMOR)	ppt	NA	NA	(2)	Range Average	ND	ND	Industrial processes

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) (p)								
PFAS Analyzed by EPA Methods 533 and 537.1								
Perfluorooctanoic Acid (PFOA)	ppt	NL = 5.1	NA	4	Range Average	ND		Industrial chemical factory discharges; runoff/leaching from landfills; used in fire-retarding foams and various industrial processes
Perfluorooctanesulfonic Acid (PFOS)	ppt	NL = 6.5	NA	4	Range Average	ND		
Perfluorobutanesulfonic acid (PFBS)	ppt	NL = 500	NA	3	Range Average	ND		
Perfluorononanoic acid (PFNA)	ppt	NA	NA	4	Range Average	ND		
Perfluorohexanesulfonic acid (PFHxS)	ppt	NL = 3	NA	3	Range Average	ND		
Perfluoroheptanoic acid (PFHpA)	ppt	NA	NA	3	Range Average	ND		
Perfluorodecanoic acid (PFDA)	ppt	NA	NA	3	Range Average	ND		
Perfluorododecanoic acid (PFDoA)	ppt	NA	NA	3	Range Average	ND		
Perfluorohexanoic Acid (PFHxA)	ppt	NA	NA	3	Range Average	2.4		
Perfluoroundecanoic acid (PFUnA)	ppt	NA	NA	2	Range Average	ND		
4,8-dioxa-3H-perfluorononanoate (ADONA)	ppt	NA	NA	3	Range Average	ND		
F-53B Major (11Cl-PF3OUdS)	ppt	NA	NA	5	Range Average	ND		
F-53B Minor (9Cl-PF3ONS)	ppt	NA	NA	2	Range Average	ND		
GenX (HFPO-DA)	ppt	NA	NA	5	Range Average	ND		

PFAS Analyzed by EPA Method 533 Only (q)								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ppt	NA	NA	3	Range Average	ND		Industrial chemical factory discharges; runoff/leaching from landfills; used in fire-retarding foams and various industrial processes
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ppt	NA	NA	5	Range Average	ND		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ppt	NA	NA	5	Range Average	ND		
Perfluoro-3-methoxypropanoic acid (PFMPA)	ppt	NA	NA	4	Range Average	ND		
Perfluoro-4-methoxybutanoic acid (PFMBA)	ppt	NA	NA	3	Range Average	ND		
Perfluorobutanoic acid (PFBA)	ppt	NA	NA	5	Range Average	ND		
Perfluoroheptanesulfonic acid (PFHpS)	ppt	NA	NA	3	Range Average	ND		
Perfluoropentanesulfonic acid (PFPeS)	ppt	NA	NA	4	Range Average	ND		
Perfluoropentanoic acid (PFPeA)	ppt	NA	NA	3	Range Average	ND		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ppt	NA	NA	20	Range Average	ND		
Perfluoro(2-ethoxyethane)sulfonic acid	ppt	NA	NA	3	Range Average	ND		
PFAS Analyzed by EPA Method 537.1 Only								
Perfluorotetradecanoic acid (PFTA)	ppt	NA	NA	(2)	Range Average	ND		Industrial chemical factory discharges; runoff/leaching from landfills; used in fire-retarding foams and various industrial processes
Perfluorotridecanoic acid (PFTrDA)	ppt	NA	NA	(2)	Range Average	ND		
N-ethyl Perfluorooctanesulfonamidoace	ppt	NA	NA	(2)	Range Average	ND		
N-methyl Perfluorooctanesulfonamidoace	ppt	NA	NA	(2)	Range Average	ND		

Miscellaneous	(r)								
Calcium Carbonate Precipitation Potential (CCPP) (as $CaCO_3$)	(s)	ppm	NA	NA	NA	Range	1.4 - 3.1		Measures of the balance between pH and calcium carbonate saturation in the water
						Average	2.2		
Corrosivity (as Aggressiveness Index)	(t)	AI	NA	NA	NA	Range	12.0 - 12.1		
						Average	12.0		
Corrosivity (as Saturation Index)	(u)	SI	NA	NA	NA	Range	0.28 - 0.34		
						Average	0.31		
pH		pH Units	NA	NA	NA	Range	8.2 - 8.4		NA
						Average	8.3		
Radon	(l)	pCi/L	NA	NA	100	Range	ND		Gas produced by the decay of naturally-occurring uranium in soil and water
						Average			
Total Dissolved Solids, Calculated (TDS)	(v)	ppm	1,000	NA	NA	Range	285 - 305		Runoff/leaching from natural deposits
						Average	295		
Sum of Five Haloacetic Acids (HAA5)	(w)	ppb	60	NA	6.0	Range	ND		Byproducts of drinking water chlorination
						Average			
Total Trihalomethanes (TTHM)	(w)	ppb	80	NA	4.0	Range	9.9 - 42		
						Average	17		

Footnotes	
a)	Metropolitan monitors turbidity at the CFE locations using continuous and grab samples. Turbidity, a measure of cloudiness of the water, is an indicator of treatment performance. Turbidity was in compliance with the TT primary drinking water standard and the secondary drinking water standard of less than 5 NTU.
b)	Per the state's Surface Water Treatment Rule, treatment techniques that remove or inactivate Giardia cysts will also remove HPC bacteria, Legionella, and viruses. Legionella and virus monitoring is not required.
c)	Compliance is based on monthly samples from treatment plant effluents and the distribution system.
d)	The E. coli MCL is based on routine and repeat samples testing positive for coliforms and/or E. coli, or failure to analyze required repeat samples. No coliforms were found in the water treatment system and distribution system. No Level 1 assessment or MCL violations occurred.
e)	Metropolitan analyzes HPC bacteria in plant effluent to monitor treatment process efficacy.
f)	Data are from samples collected in 2021 for the required triennial monitoring period (2020-2022).
g)	Metropolitan uses acrylamide for water treatment processes and was in compliance with the treatment technique requirements regarding its use when treating drinking water. Metropolitan does not use any epichlorohydrins.
h)	Compliance with the State MCL for aluminum is based on RAA. No secondary standard MCL exceedance occurred.
(i)	Data are from samples collected in 2020 for the required 9-year monitoring cycle (2020-2028).
(j)	As a wholesaler, Metropolitan has no retail customers and is not required to collect samples at consumers' taps. However, compliance monitoring under Title 22 is required at plant effluents.
(k)	Metropolitan was in compliance with all provisions of the State's fluoridation system requirements. Fluoride feed systems were temporarily out of service during treatment plant shutdowns and/or maintenance work in 2022, resulting in occassional fluoride levels below 0.7 mg/L.
(l)	Starting in 2021, samples are collected quarterly for gross beta particle activity and annually for tritium and strontium-90. Gross alpha particle activity, radium, and uranium data are from samples collected in 2020 for the required triennial monitoring (2020-2022). Radon is also monitored voluntarily with the triennial radionuclides.
(m)	Compliance with the State and Federal MCLs is based on RAA or LRAA, as appropriate. Plant core locations for TTHM and HAA5 are service connections specific to each of the treatment plant effluents. One core location from the Jensen treatment plant effluent's service connections was excluded in the RAA and LRAA calculations due to operational changes in the Jensen distribution system.
(n)	PHG assigned for each individual THM. Health risk varies with different combinations and ratios of the other THMs in a particular sample.
(o)	Metropolitan's TDS compliance data are based on flow-weighted monthly composite samples collected twice per year (April and October). The 12-month statistical summary of flow-weighted data is reported in the "Other Parameters" section.
(p)	CCRDL is based on the EPA UCMR5 MRLs for the 25 EPA Method 533 constituents. Results below CCRDLs are considered "ND". PFAS results below the CCRDLs but above the RLs are included in this report.
(q)	Data are from the average result of the original and field duplicate samples collected from Weymouth plant effluent only.
(r)	Data are from voluntary monitoring of constituents and are provided for informational purposes.
(s)	Positive CCPP indicates non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative CCPP indicates corrosive; tendency to dissolve calcium carbonate. Reference: Standard Method (SM2330)
(t)	AI ≥ 12.0 = Non-aggressive water AI (10.0–11.9) = Moderately aggressive water AI ≤ 10.0 = Highly aggressive water Reference: ANSI/AWWA Standard C400-93 (R98)
(u)	Positive SI indicates non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI indicates corrosive; tendency to dissolve calcium carbonate. Reference: Standard Method (SM2330)
(v)	Statistical summary represents 12 months of flow-weighted data and values may be different than the TDS reported to meet compliance with secondary drinking water regulations. Metropolitan's calculated TDS goal is 500 mg/L.
(w)	HAA5 and TTHM noncompliance samples were collected at the treatment plant effluents.
(x)	One sample had no detectable chlorine residual but met regulatory requirements through an HPC result of less than 500 CFU/mL.

2022 PERRIS WELLS 57, 59

Results from Well 57 Blend and Well 59 Treated Effluent.

*NOTE: Well 57 only online for a few days in January; offline for the rest of the year

DETECTED CONSTITUENTS			2022	2022
Constituent	**Units**	**DLR Value**	**Range**	**Average**
PRIMARY STANDARDS				
Arsenic	ug/L	2	No Range	2.3
Barium	ug/L	100	No Range	186
Fluoride	mg/L	0.1	No Range	0.4
Gross Alpha	pCi/L	3	3.1 - 9.1	6.1
Nitrate as N	mg/L	0.4	4.9 - 6.1	5.4
Uranium	pCi/L	1	1.4 - 9.2	5.3
SECONDARY STANDARDS				
Chloride	mg/L	null	No Range	219
EC - Specific Conductance	umhos/cm	null	1060 - 1360	1220
Sulfate	mg/L	0.5	No Range	50
Total Dissolved Solids	mg/L	null	856 - 858	857
OTHER PARAMETERS				
Aggressive Index (Corrosivity)	units	null	No Range	11.4
Alkalinity, Total as CaCO3	mg/L	null	No Range	123
Bicarbonate (HCO3)	mg/L	null	No Range	150
Boron	ug/L	100	No Range	365
Calcium	mg/L	null	No Range	81
Hardness	mg/L	null	No Range	299
Hardness	gr/gal	null	No Range	17
Langelier Index	units	null	No Range	-0.47
Magnesium	mg/L	null	No Range	24
Odor at 60 degrees C	TON	null	No Range	1
pH, field	pH unit	null	No Range	7.04
Potassium	mg/L	null	No Range	2.7
Silica	mg/L	null	No Range	46
Sodium	mg/L	null	No Range	92
Total Organic Carbon (TOC)	mg/L	0.3	No Range	0.5
Turbidity, Laboratory	NTU	0.1	No Range	0.3

				2021 data
NON-DETECTED CONSTITUENTS			**2022**	**2022**
Constituent	**Units**	**DLR Value**	**Range**	**Average**
1,1-Dichloroethane	ug/L	0.5	No Range	ND
1,1-Dichloroethene	ug/L	0.5	No Range	ND
1,1,1-Trichloroethane	ug/L	0.5	No Range	ND
1,1,2-Trichloroethane	ug/L	0.5	No Range	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	No Range	ND
1,2-Dibromo-3-Chloropropane	ug/L	0.01	No Range	ND
1,2-Dichlorobenzene	ug/L	0.5	No Range	ND

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1,2-Dichloroethane	ug/L	0.5	No Range	ND
1,2-Dichloropropane	ug/L	0.5	No Range	ND
1,2,3-Trichloropropane (TCP)	ug/L	0.005	No Range	ND
1,2,4-Trichlorobenzene	ug/L	0.5	No Range	ND
1,3-Dichloropropene (Total)	ug/L	0.5	No Range	ND
1,4-Dichlorobenzene	ug/L	0.5	No Range	ND
2,3,7,8-TCDD (Dioxin)	pg/L	5	No Range	ND
2,4-D	ug/L	10	No Range	ND
2,4,5-TP	ug/L	1	No Range	ND
Alachlor	ug/L	1	No Range	ND
Aluminum	ug/L	50	No Range	ND
Antimony	ug/L	6	No Range	ND
Atrazine	ug/L	0.5	No Range	ND
Bentazon	ug/L	2	No Range	ND
Benzene	ug/L	0.5	No Range	ND
Benzo (a) pyrene	ug/L	0.1	No Range	ND
Beryllium	ug/L	1	No Range	ND
Bis(2-ethylhexyl)adipate	ug/L	5	No Range	ND
Bis(2-ethylhexyl)phthalate	ug/L	3	No Range	ND
Cadmium	ug/L	1	No Range	ND
Carbofuran	ug/L	5	No Range	ND
Carbonate (CO3)	mg/L	null	No Range	ND
Carbon Tetrachloride	ug/L	0.5	No Range	ND
Chlordane	ug/L	0.1	No Range	ND
Chlorobenzene	ug/L	0.5	No Range	ND
Chromium (Total)	ug/L	10	No Range	ND
cis-1,2-Dichloroethene	ug/L	0.5	No Range	ND
Color - Apparent	units	3	No Range	ND
Copper	ug/L	50	No Range	ND
Cyanide	ug/L	100	No Range	ND
Dalapon	ug/L	10	No Range	ND
Dinoseb	ug/L	2	No Range	ND
Diquat	ug/L	4	No Range	ND
Endothall	ug/L	45	No Range	ND
Endrin	ug/L	0.1	No Range	ND
Ethylbenzene	ug/L	0.5	No Range	ND
Ethylene Dibromide (EDB)	ug/L	0.02	No Range	ND
Foaming Agents (MBAS)	mg/L	null	No Range	ND
gamma-BHC (Lindane)	ug/L	0.2	No Range	ND
Glyphosate	ug/L	25	No Range	ND
Gross Beta	pCi/L	4	ND - 5.1	ND
Heptachlor	ug/L	0.01	No Range	ND
Heptachlor epoxide	ug/L	0.01	No Range	ND
Hexachlorobenzene	ug/L	0.5	No Range	ND
Hexachlorocyclopentadiene	ug/L	1	No Range	ND
Hydroxide (OH)	mg/L	null	No Range	ND
Iron	ug/L	100	No Range	ND

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Lead	ug/L	5	No Range	ND
Manganese	ug/L	20	No Range	ND
Mercury	ug/L	1	No Range	ND
Methoxychlor	ug/L	10	No Range	ND
Methyl-Tert-Butyl-Ether (MTBE)	ug/L	3	No Range	ND
Methylene Chloride	ug/L	0.5	No Range	ND
Molinate	ug/L	2	No Range	ND
Nickel	ug/L	10	No Range	ND
Nitrite as N	mg/L	0.4	No Range	ND
Oxamyl	ug/L	20	No Range	ND
PCBs-Total	ug/L	0.5	No Range	ND
Pentachlorophenol	ug/L	0.2	No Range	ND
Perchlorate	ug/L	2	ND - 5.9	ND
Picloram	ug/L	1	No Range	ND
Radium 226	pCi/L	1	No Range	ND
Radium 228	pCi/L	1	No Range	ND
Selenium	ug/L	5	No Range	ND
Silver	ug/L	10	No Range	ND
Simazine	ug/L	1	No Range	ND
Styrene	ug/L	0.5	No Range	ND
Tetrachloroethene	ug/L	0.5	No Range	ND
Thallium	ug/L	1	No Range	ND
Thiobencarb	ug/L	1	No Range	ND
Toluene	ug/L	0.5	No Range	ND
Toxaphene	ug/L	1	No Range	ND
trans-1,2-Dichloroethene	ug/L	0.5	No Range	ND
Trichloroethene	ug/L	0.5	No Range	ND
Trichlorofluoromethane	ug/L	5	No Range	ND
Trichlorotrifluoroethane	ug/L	10	No Range	ND
Vinyl Chloride	ug/L	0.5	No Range	ND
Xylenes (Total)	ug/L	0.5	No Range	ND
Zinc	ug/L	50	No Range	ND

PFAS	Abbreviation	Units	CCRDL (ng/L)	Range	2022
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	ng/L	4	No Range	ND
N-methyl perfluorooctanesulfonamidoacetic acid	NMEFOSAA	ng/L	4	No Range	ND
Perfluorobutanesulfonic acid	PFBS	ng/L	4	ND - 35	8.1
Perfluorohexane sulfonic acid	PFHxS	ng/L	4	ND - 12 [1]	ND
Perfluorooctane sulfonic acid	PFOS	ng/L	4	No Range	ND
Perfluorodecanoic Acid	PFDA	ng/L	4	No Range	ND
Perfluorododecanoic acid	PFDoA	ng/L	4	No Range	ND
Perfluorohexanoic acid	PFHxA	ng/L	4	ND - 160	46
Perfluoroheptanoic acid	PFHpA	ng/L	4	ND - 23	ND
Perfluorononanoic acid	PFNA	ng/L	4	No Range	ND

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Perfluorooctanoic Acid	PFOA	ng/L	4	ND - 7.8 [2]	ND
Perfluorotetradecanoic Acid	PFTA	ng/L	4	No Range	ND
Perfluorotridecanoic acid	PFTrDA	ng/L	4	No Range	ND
Perfluoroundecanoic acid	PFUnA	ng/L	4	No Range	ND
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUds	ng/L	2	No Range	ND
4,8-dioxa-3H-perfluorononanoic acid	ADONA	ng/L	2	No Range	ND
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	ng/L	2	No Range	ND
Hexafluoropropylene oxide dimer acid	HFPA-DA	ng/L	4	No Range	ND

*CCRDL: Consumer Confidence Report Detection Levels

[1] PFHxS result occurred in March 2022, prior to DDW establishing NL and RL's for PFHxS

[2] Notification to governing board on April 20, 2022 and to member agency on April 26, 2022

2022 PERRIS WATER FILTRATION PLANT

Combined Filter Effluent Turbidity	**2022**
Highest NTU	0.15
% < = 0.1	99.87

DETECTED CONSTITUENTS **2022** **2022**

Constituent	Units	DLR Value	Range	Average
PRIMARY STANDARDS				
Arsenic	ug/L	2	No Range	2.8
Barium	ug/L	100	No Range	107
Fluoride	mg/L	0.1	ND - 0.30	0.24
Nitrate as N	mg/L	0.4	ND - 3.6	0.54
Uranium	pCi/L	1	No Range	2.6
SECONDARY STANDARDS				
Chloride	mg/L	null	77 - 113	101
EC - Specific Conductance	umhos/cm	null	525 - 1080	928
Sulfate	mg/L	0.5	45 - 228	190
Total Dissolved Solids	mg/L	null	312 - 708	604
OTHER PARAMETERS				
Aggressive Index (Corrosivity)	units	null	11.1 - 12.8	12.5
Alkalinity, Total as CaCO3	mg/L	null	93 - 150	134
Bicarbonate (HCO3)	mg/L	null	113 - 183	163
Boron	ug/L	100	122 - 165	137
Calcium	mg/L	null	28 - 76	68
HAA5 - Haloacetic Acids (Five)	ug/L	1	ND - 11	5.3
Hardness	mg/L	null	119 - 299	270
Hardness	gr/gal	null	7.0 - 17	16
Langelier Index	units	null	-0.88 - 0.99	0.56
Magnesium	mg/L	null	12 - 27	25
Odor at 60 degrees C	TON	null	No Range	1
pH, Field	pH unit	null	7.2 - 8.4	8.1
Potassium	mg/L	null	3.5 - 5.2	4.7
Silica	mg/L	null	7.1 - 14	11
Sodium	mg/L	null	60 - 112	97
Total Organic Carbon (TOC)	mg/L	0.3	1.7 - 3.7	2.7
Total Trihalomethanes (TTHM)	ug/L	1	7.8 - 41	22

NON-DETECTED CONSTITUENTS **2022** **2022**

Constituent	Units	DLR Value	Range	Average
1,1-Dichloroethane	ug/L	0.5	No Range	ND
1,1-Dichloroethene	ug/L	0.5	No Range	ND
1,1,1-Trichloroethane	ug/L	0.5	No Range	ND
1,1,2-Trichloroethane	ug/L	0.5	No Range	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	No Range	ND
1,2-Dibromo-3-Chloropropane	ug/L	0.01	No Range	ND

1,2-Dichlorobenzene	ug/L	0.5	No Range	ND
1,2-Dichloroethane	ug/L	0.5	No Range	ND
1,2-Dichloropropane	ug/L	0.5	No Range	ND
1,2,3-Trichloropropane (TCP)	ug/L	0.005	No Range	ND
1,2,4-Trichlorobenzene	ug/L	0.5	No Range	ND
1,3-Dichloropropene (Total)	ug/L	0.5	No Range	ND
1,4-Dichlorobenzene	ug/L	0.5	No Range	ND
2,3,7,8-TCDD (Dioxin)	pg/L	5	No Range	ND
2,4-D	ug/L	10	No Range	ND
2,4,5-TP	ug/L	1	No Range	ND
Alachlor	ug/L	1	No Range	ND
Aluminum	ug/L	50	No Range	ND
Antimony	ug/L	6	No Range	ND
Atrazine	ug/L	0.5	No Range	ND
Bentazon	ug/L	2	No Range	ND
Benzene	ug/L	0.5	No Range	ND
Benzo (a) pyrene	ug/L	0.1	No Range	ND
Beryllium	ug/L	1	No Range	ND
Bis(2-ethylhexyl)adipate	ug/L	5	No Range	ND
Bis(2-ethylhexyl)phthalate	ug/L	3	No Range	ND
Cadmium	ug/L	1	No Range	ND
Carbofuran	ug/L	5	No Range	ND
Carbonate (CO3)	mg/L	null	No Range	ND
Carbon Tetrachloride	ug/L	0.5	No Range	ND
Chlordane	ug/L	0.1	No Range	ND
Chlorobenzene	ug/L	0.5	No Range	ND
Chromium (Total)	ug/L	10	No Range	ND
cis-1,2-Dichloroethene	ug/L	0.5	No Range	ND
Color - Apparent	units	3	No Range	ND
Copper	ug/L	50	No Range	ND
Cyanide	ug/L	100	No Range	ND
Dalapon	ug/L	10	No Range	ND
Dinoseb	ug/L	2	No Range	ND
Diquat	ug/L	4	No Range	ND
Endothall	ug/L	45	No Range	ND
Endrin	ug/L	0.1	No Range	ND
Ethylbenzene	ug/L	0.5	No Range	ND
Ethylene Dibromide (EDB)	ug/L	0.02	No Range	ND
Foaming Agents (MBAS)	mg/L	null	No Range	ND
gamma-BHC (Lindane)	ug/L	0.2	No Range	ND
Glyphosate	ug/L	25	No Range	ND
Gross Alpha	pCi/L	3	No Range	ND
Gross Beta	pCi/L	4	No Range	ND
Heptachlor	ug/L	0.01	No Range	ND
Heptachlor epoxide	ug/L	0.01	No Range	ND
Hexachlorobenzene	ug/L	0.5	No Range	ND
Hexachlorocyclopentadiene	ug/L	1	No Range	ND

Hydroxide (OH)	mg/L	null	No Range	ND
Iron	ug/L	100	No Range	ND
Lead	ug/L	5	No Range	ND
Manganese	ug/L	20	No Range	ND
Mercury	ug/L	1	No Range	ND
Methoxychlor	ug/L	10	No Range	ND
Methyl-Tert-Butyl-Ether (MTBE)	ug/L	3	No Range	ND
Methylene Chloride	ug/L	0.5	No Range	ND
Molinate	ug/L	2	No Range	ND
Nickel	ug/L	10	No Range	ND
Nitrite as N	mg/L	0.4	No Range	ND
Oxamyl	ug/L	20	No Range	ND
PCBs-Total	ug/L	0.5	No Range	ND
Pentachlorophenol	ug/L	0.2	No Range	ND
Perchlorate	ug/L	2	No Range	ND
Picloram	ug/L	1	No Range	ND
Radium 226	pCi/L	1	No Range	ND
Radium 228	pCi/L	1	No Range	ND
Selenium	ug/L	5	No Range	ND
Silver	ug/L	10	No Range	ND
Simazine	ug/L	1	No Range	ND
Styrene	ug/L	0.5	No Range	ND
Tetrachloroethene	ug/L	0.5	No Range	ND
Thallium	ug/L	1	No Range	ND
Thiobencarb	ug/L	1	No Range	ND
Toluene	ug/L	0.5	No Range	ND
Toxaphene	ug/L	1	No Range	ND
trans-1,2-Dichloroethene	ug/L	0.5	No Range	ND
Trichloroethene	ug/L	0.5	No Range	ND
Trichlorofluoromethane	ug/L	5	No Range	ND
Trichlorotrifluoroethane	ug/L	10	No Range	ND
Turbidity, Laboratory	NTU	0.1	No Range	ND
Vinyl Chloride	ug/L	0.5	No Range	ND
Xylenes (Total)	ug/L	0.5	No Range	ND
Zinc	ug/L	50	No Range	ND

PFAS	Abbreviation	Units	CCRDL (ng/L)	Range	2022
N-ethyl perfluorooctanesulfonamidoacetic	NEtFOSAA	ng/L	4	No Range	ND
N-methyl perfluorooctanesulfonamidoacetic	NMEFOSAA	ng/L	4	No Range	ND
Perfluorobutanesulfonic acid	PFBS	ng/L	4	No Range	ND
Perfluorohexane sulfonic acid	PFHxS	ng/L	4	No Range	ND
Perfluorooctane sulfonic acid	PFOS	ng/L	4	No Range	ND
Perfluorodecanoic Acid	PFDA	ng/L	4	No Range	ND
Perfluorododecanoic acid	PFDoA	ng/L	4	No Range	ND
Perfluorohexanoic acid	PFHxA	ng/L	4	No Range	ND

Perfluoroheptanoic acid	PFHpA	ng/L	4	No Range	ND
Perfluorononanoic acid	PFNA	ng/L	4	No Range	ND
Perfluorooctanoic Acid	PFOA	ng/L	4	No Range	ND
Perfluorotetradecanoic Acid	PFTA	ng/L	4	No Range	ND
Perfluorotridecanoic acid	PFTrDA	ng/L	4	No Range	ND
Perfluoroundecanoic acid	PFUnA	ng/L	4	No Range	ND
11-chloroeicosafluoro-3oxaundecane-1-sulfonic acid	11Cl-PF3OUds	ng/L	2	No Range	ND
4,8-dioxa-3H-perfluorononanoic acid	ADONA	ng/L	2	No Range	ND
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	ng/L	2	No Range	ND
Hexafluoropropylene oxide dimer acid	HFPA-DA	ng/L	4	No Range	ND

*CCRDL: Consumer Confidence Report Detection Levels

DEFINITION OF TERMS					
AI	Aggressiveness Index	MCL	Maximum Contaminant Level	ppq	parts per quadrillion or picograms per liter (pg/L)
AL	Action Level	MCLG	Maximum Contaminant Level Goal	ppt	parts per trillion or nanograms per liter (ng/L)
Average	Result based on arithmetic mean	MFL	Million Fibers per Liter	RAA	Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a 12-month period
$CaCO_3$	Calcium Carbonate	MRDL	Maximum Residual Disinfectant Level		
CFU	Colony-Forming Units	MRDLG	Maximum Residual Disinfectant Level Goal		
DBP	Disinfection Byproducts	NA	Not Applicable	Range	Results based on minimum and maximum values
DLR	Detection Limits for Purposes of Reporting	ND	Not Detected	SI	Saturation Index (Langelier)
LRAA	Locational Running Annual Average: highest LRAA is the highest of all Locational Running Annual Averages calculated as average of all samples collected within a 12-month period	NL	Notification Level to SWRCB	SWRCB	State Water Resources Control Board
		NTU	Nephelometric Turbidity Units	TON	Threshold Odor Number
		pCi/L	picoCuries per Liter	TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
		PHG	Public Health Goal		
		ppb	parts per billion or micrograms per liter (µg/L)	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)
MBAS	Methylene Blue Active Substances	ppm	parts per million or milligrams per liter (mg/L)		