2019 Annual Water Quality Report for the City of Patterson

December 31, 2019. According to the State Water Resources Control Board (SWRCB) records, the city's only source of water is groundwater. This assessment was done using the Default Groundwater System Method. Your water comes from seven (7) sources: Well 2 – North 5th Street, Well 5 – Hartley Avenue, Well 6 – Poppy Avenue, Well 7 – Hartley Avenue, Well 8 – Orange Avenue, Well 9 – Orange Avenue and Well 11 – Sycamore Avenue. The public can participate in decisions that affect drinking water quality by attending City Council meetings on the 1st and 3rd Tuesday of every month at 7pm. City Council meetings are held in the City Hall Council Chambers located at 1 Plaza, Patterson, CA 95363. For more information about this report or any questions related to your drinking water, please call (209) 895-8060 or visit our website www.ci.patterson.ca.us. Any violation of MCL, AL or MRDL is highlighted.

Este informe tiene información muy importante con respecto a su agua potable. Por favor traduzcalo o hable con alguien que lo entienda bien.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical sources of contaminant
Total Coliform Bacteria*	1/mo. (2019)	0	no more than 1 positive montly sample	0	Naturally present in the environment

*Coliforms are bacteria that are naturally prsent in the environment and are used as an indicator that other potentially harmful, waterboarne pathogens may be prsent or that a potential pathway eixists through 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 assessment(s) to identify problems that were found during these assessments.

TABLE 2 - SAMPLING RESULTS FOR LEAD AND COPPER

Constituent (Unit of Measure)	Sample Date	90th percentile level detected	No. Sites Exceeding AL	AL	PHG	Typical sources of contaminant
Lead (ug/L)*	46 (2018)	1.7	1	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers, erosion of natural deposits
Copper (mg/L)	46 (2018)	0.18	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

*Infants and children who drink water containg lead in excess of the action level may esperiece 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 presssure.

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDESS

Chemical or Constituent (and reporting units)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG)	Typical sources of contaminant
Sodium (ppm)	(2017-2019)	105	68 - 147	none	none	Salt present in the water and is generally naturally occurring
Total Hardness (ppm)	(2017-2019)	371	255 - 536	none	none	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

TABLE 4 - DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG) (MRDLG)	Typical sources of contaminant
Arsenic (As) (ug/L)	(2017-2019)	4	2 - 5	10	0.004	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes
Chromium (ug/L)	(2017-2019)	21	17 - 28	50.0	n/a	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (mg/L)	(2017-2019)	0.1	ND - 0.4	2	1	Erosion of natural deposits; discharge from fertilizer and aluminum
Hexavalent Chromium* (ug/L)	(2017-2019)	19.7	16.3 - 26.3		0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Nitrate as N (ug/L)	(2019)	4.5	1.4 - 8.3	10	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate+Nitrate as N (mg/L)	(2017-2019)	3.6	1.4 - 7.5	10	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ug/L)	(2017-2019)	7	5 - 10	50	30	Discharge from petroleum, glass, and metal refineries, mines and chemical manufacturers; erosion of natural deposits; runoff from livestock lots (feed additive)
Gross Alpha (pCi/L)	(2012-2019)	3.24	ND - 5.14	15	0	Erosion of natural deposits.
Uranium pCi/L	(2012-2019)	2.147	ND - 3.57	20	0.43	Erosion of natural deposits
Tetrachloroethylene (PCE) (ug/L)	(2017-2019)	1.1	ND - 3.6	5	0.06	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
1,2,3,-Trichloropropane (1,2,3-TCP) (ug/L)*	(2018-2019)	ND	ND - 0.009	0.005	0.0007	Discharge from industrial and agricultural chemical factories: leaching from hazardous waste sites:used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compunds and pesticides.

*Some people who use water containing 1,2,3-trichloropropane in excess of the action level over many years may have an increased risk of getting cancer, based on studies in laboratory animals

TABLE 5 - TREATED DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG) (MRDLG)	Typical sources of contaminant
Chromium (ug/L)	(2016)	24	19 - 30	50.0	n/a	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Hexavalent Chromium (ug/L)*	(2016)	17.3	ND - 25.9	10	0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Nitrate as N (mg/L)	(2016)	4	3.3 - 4.7	10	10	Runoff and leaching from fertilizers; leaching from septic tanks, sewage; erosion of natural deposits

*Some people who drink water containing hexavalent chromium in excess of the MCL over many years may have an increased risk of getting cancer.

TABLE 6 - DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG)	Typical sources of contaminant
Chloride (mg/L)	(2017 - 2019)	129	35 - 255	500	n/a	Runoff and leaching from natural deposits; seawater influence
Iron (Fe) (ug/L)*	(2017 - 2019)	189	ND - 1390	300	n/a	Leaching from natural deposits; industrial wastes
Odor Threshold at 60 °C	(2017 -2019)	ND	ND - 25.9	3	n/a	Naturally-occurring organic materials
Specific Conductance (umhos/cm)	(2017 - 2019)	1372	822 - 1730	1600	n/a	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	(2017 -2019)	288	211 - 365	500	n/a	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	(2017 - 2019)	858	520 - 1100	1000	n/a	Runoff/leaching from natural deposits
Turbidity (NTU)	(2017 - 2019)	0.5	ND - 1.4	5	n/a	Soil runoff

*Iron was found at levels that exceed the secondary MCL. The Iron MCL was set to protect you against unpleasant aesethic affects such as color, taste, odor and the staining of plumbing fixtures (e.g., tubs and sinks), and clothing while washing. Violating this MCL does not pose a risk to public health.

TABLE 7 - TREATED DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG)	Typical sources of contaminant
Total Dissolved Solids (mg/L)	(2016)	1107	1060 - 1170	1000	n/a	Runoff/leaching from natural deposits

TABLE 8 - DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	Notification Level	Typical sources of contaminant
Boron (mg/L)	2017-2019	0.4	0.3 - 0.6	1	The babies of some pregnant women who drink water containing boron or vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals. Some people who use water containing1,2,3-trichloropropane in excess of the ation level over many years may have an increased risk of getting cancer, based on studies in laboratory animals.
Vanadium (mg/L)	2017-2019	0.008	0.007 - 0.011	0.05	

TABLE 9 - ADDITIONAL DETECTIONS

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	Notification Level	Typical sources of contaminant
Calcium (mg/L)	2017-2019	66	46-96	n/a	n/a
Magnesium (mg/L)	2017-2019	50	34-72	n/a	n/a
PH (units)	2017-2019	7.8	6.9-9.5	n/a	n/a
Alkalinity (mg/L)	2017-2019	154	110-200	n/a	n/a
Aggressiveness Index	2017-2019	12.2	11.3-13.8	n/a	n/a
Langelier Index	2017-2019	0.3	-0.5 - 1.9	n/a	n/a

TABLE 10 - DETECTION OF DISINFECTANT/DISINFETAT BYPRODUCT RULE

Chemical or Constituent (Unit of Measure)	Sample Date	Average Level Detected	Range of Detection	MCL (MRDL)	PHG (MCLG)	Violation	Typical sources of contaminant
Total Trihalomethanes (TTHMs) (ug/L)	2019	19	3-22	80	n/a	No	By-product of drinking water disinfection.
Chloride (mg/L)	2019	0	n/a	4.0	4.0	No	Drinking water disinfectant added for treatment.
Haloacetic Acids (5) (ug/L)	2018	2.75	ND-4	60	n/a	No	By-product of drinking water disinfection.

Maximum Contaminant Level (MCL):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.

Maximum Contaminant Level Goal (MCLG):The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL):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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

ND: not detectable at testing limit

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria has been found in our water system.

Level 2 Assessment: A Level 2 assesment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

pCi/L: picocuries per liter (a measure of radiation)

The city's drinking water is dependent off seven groundwater wells. 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 stormwater runoff, industrial or domestic wastewater discharges, oil, gas production, mining or farming.

Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products if industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, 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 that tap water is safe to drink, the USEPA and the State Water Resource Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health. Tables 2, 3, 4, 5, 6, 7, 8, 9 and 10 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

Additional General Information on Drinking Water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts in 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 the 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. Immunocompromised 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). Lead Specific Language for Community Water Systems: 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 the service lines and home plumbing. City of Patterson Drinking Water 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.

Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

About our Lead: 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.

About our 1,2,3-Trichloropropane (1,2,3-TCP): Some people who use water containing 1,2,3-trichloropropane in excess of the action level over many years may have an increased risk of getting cancer, based on studies in laboratory animals.

About our Hexavalent Chromium: Some people who drink water containing hexavalent chromium in excess of the MCL over many years may have an increased risk of getting cancer.

About our Iron: Iron was found at levels that exceed the secondary MCL. The Iron MCL was set to protect you against unpleasant aesthetic affects such as color, taste, odor and the staining of plumbing fixtures (e.g., tubs and sinks), and clothing while washing. Violating this MCL does not pose a risk to public health.

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