

City of Merkel Public Water System (PWS) 2018 Annual Drinking Water Report

(Also known as the Consumer Confidence Report)
Water System Identification Number – TX2210002

Annual Water Quality Report for the period of January 1 to December 31, 2018

City of Merkel PWS purchases treated surface water from the City of Abilene which treats surface water from Lake Fort Phantom, Lake Ivie and Hubbard Creek Lake

For more information regarding this report contact: Steve Campbell, City Manager at (325) 928-4911
Este reporte incluye informacion sobre el agua para tomar. Para asistencia en espanol, favor de llamar at telephono (325) 928-4911

PUBLIC PARTICIPATION OPPORTUNITIES AT CITY OF MERKEL COUNCIL MEETINGS

Date: Second Monday of every month. **Time:** 7:00 PM

Note – The meeting time and date may change due to conflicting community events

Location: Heritage Hall, 111 Taylor St., Merkel, Texas 79536 **Phone:** (325) 928-4911

Sources of Drinking Water

The sources of drinking water (both tap water 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.

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. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800) 426-4791.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which 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, which 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, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which 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 EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, may be particularly at risk from infections. You should seek advice about drinking water from your physician or health care providers. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

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. We are responsible for providing high quality drinking water, but we 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/safewater/lead](http://www.epa.gov/safewater/lead).

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water source(s) has been completed by the Texas Commission on Environmental Quality. This report describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>, or contact Steve Campbell at 325-928-4911.

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>.

Source Water	Name	Type of Water	Report Status	Location
SW From the City of Abilene	CC from TX2210001	SW	Complete	Lake Ft. Phantom, Lake Ivie, Lake Hubbard

Water Quality Test Results Explanation of Acronyms Used in this Report: The following tables contain scientific terms and measures, some of which may require explanation.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level or 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 or 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.

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 have been found in our water system.

Level 2 Assessment: A level 2 assessment 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.

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

MFL: million fibers per liter (a measure of asbestos)

mrem: millirems per year (a measure of radiation absorbed by the body)

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

ppm: milligrams per liter or parts per million-or one ounce in 7,350 gallons of water.

ppq: parts per quadrillion, or picograms per liter (pg/L)

na: not applicable

NTU: nephelometric turbidity units (a measure of turbidity)

ppb: micrograms per liter or parts per billion-or one ounce in 7,350,000 gallons of water.

ppt: parts per trillion, or nanograms per liter (ng/L)

Disinfectant (Chloramine) Levels Testing Results in the City of Merkel PWS Distribution System									
Disinfectant	Year of Range	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measurement	Violation	Source of Chemical
Chloramines	2018	3.7	0.9	4.2	4.0	4.0	ppm	N	Disinfectant used to control microbes

Microbiological (Coliforms) Testing Results in the City of Merkel PWS Distribution System During 2017

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest Number of Positive Samples	Fecal coliform or E. coli Maximum Contaminant Level	Total Number of Positive E. coli or Fecal coliform Samples	Violation	Likely Source of Contaminant
0	1	2	0	1	N	Naturally present in the environment

2016 Water Loss Audit Information

Time Period Covered by Audit	Estimated Gallons of Water Lost During 2018	Comments and/or Explanations
January to December 2018	10,591,000	Most of the water lost during 2018 was the result of flushing to maintain water quality and/or leaks in the distribution system

2017 Regulated Contaminants Detected

Lead and Copper

Definitions: Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety. Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Lead and Copper	Date Sampled	MCLG	Action Level(AL)	90 th Percentile	#Sites Over AL	Units	Violation	Likely Source of Contamination
Lead	2016	0	15	0	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Copper	2016	1.3	1.3	0.108	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Regulated Contaminants in the City of Merkel PWS Distribution System

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAAS)	2018	28	12.1-24.6	No Goal for the Total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2018	30	10.3-61.4	No Goal for the Total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	2018	0.225	0.225-0.225	10.00	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite [measured as Nitrogen]	2015	0.02	0.02-0.02	1	1	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Regulated Contaminants in the Source Water – City of Abilene

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	2018	<1.0	<1.0	10	0	ppb	N	Erosion of Natural Deposits
Barium	2018	0.160	0.15 - 0.16	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Cyanide	2018	89	45-89	200	200	ppb	N	Discharge from plastic and fertilizer factories; Discharge from steel/metal factories
Fluoride	2018	0.802	0.624 – 0.802	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as N)	2018	1.24	0.07-1.24	10.00	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	2018	<5.0	<5.0	50.0	50	ppm	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/alpha photon emitters	2014	11.5	11.5-11.5	0	50	mrem/yr	N	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	2017	3.4	<3.0 – 3.4	na	na	pCi/L	N	Erosion of natural deposits.
Uranium	2017	0.0023	<0.0010-0.0023	0	Na	pCi/L	N	Erosion of natural deposits.

Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level or Average Detected	Range of Individual Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Atrazine	2017	.15	0 - 0.15	3	3	Ppb	N	Runoff from herbicide used on row crops
Di (2-ethylhexyl) phthalate	2017	1	0 – 0.67	0	6	Ppb	N	Discharge from rubber and chemical factories

Disinfectant Residual

A blank disinfectant residual table has been added to the CCR template, you will need to add data to the fields. Your data can be taken off the Disinfectant Level Quarterly Operating Reports (DLQOR).

Disinfectant Residual	Year	Average Level	Range of Levels Detected	MRDL	MRDLG	Unit of Measure	Violation	Source in Drinking Water
	2017	1.63	.51 – 3.84	4	4	Ppm	N	Water additive used to control microbes

Turbidity

	Level Detected	Limit (Treatment Technique)	Violation	Likely Source of Contamination
Highest single measurement	0.17	1 NTU	N	Soil runoff
Lowest monthly % meeting limit	100%	0.3 NTU	N	Soil runoff

VIOLATIONS

Revised Total Coliform Rule (RTCR)			
The Revised Total Coliform Rule (RTCR) seeks to prevent waterborne diseases caused by E.coli. 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			
Violation Type	Violation	Violation End	Violation Explanation
MCL, E. COLI, POS E. COLI (RTCR)	07/01/2018	07/31/18	E. coli bacteria were found in our drinking water during the period indicated in violation of a standard. We had an E. coli positive routine or repeat sample or we failed to test for E. coli when any repeat sample tests positive for total coliform

Information Statement: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

Regulated Contaminants in the Source Water – City of Abilene

*EPA considers 50 pCi/L to be the level of concern for beta particles.