

Dover Water Department — PWSID# 1409001 Year 2019 Annual Water Quality Report (2018 Data)

What's The Quality of Your Water? Dover Water Department is proud to supply you with this year's Water Quality Report required by the State of New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (EPA). The tables in this report show the results of our water quality analysis in the year 2016. Every regulated contaminant detected in the water, even in the minutest traces, is listed. The table contains the name of each highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), usual sources of such contamination, definitions that explain what was tested, and a key to the units of measurement. *The data tables in this report show only the substances detected in your water; other substances may have been tested and not detected.*

Dover Water Department received no violations in 2018. The EPA requires monitoring for over 80 drinking water contaminants. The contaminants listed in the table on the next page reflect only the contaminants detected in your water for the monitoring period January 1 to December 31, 2018. We routinely monitor for contaminants in your drinking water according to federal and state laws. The state allows us to monitor for some contaminants less than once per year because the concentrations of those contaminants do not change frequently. Some of our data, though representative, may be more than one year old.

Sources of Supply: Dover Water Department takes its water from 3 groundwater wells located at 100 Princeton Ave. These wells are treated for organics removal via 2 air stripping facilities. The water is then chlorinated and sent to 2 clear wells and from these to municipal water service connections. Water is also supplied to Victory Gardens, portions of Wharton, Randolph, Rockaway Township and Mine Hill.

General Drinking Water Information

Water Sources: 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. Contaminants that may be present in source water include:

- *Biological* - may come from human, agricultural, or wildlife sources.
- *Inorganic* - can be natural, from storm run-off, or from industrial or domestic wastewater discharges.
- *Pesticides and herbicides* - may come from agricultural, storm run-off or residential use.
- *Organic chemicals* - may come from industrial or domestic processes, storm run-off, and septic systems.
- *Radioactive materials* - can be naturally occurring or the result of mining or other human activities.

Presence of 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 EPA's Safe Drinking Water Hotline (1-800-426-4791). In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

Immuno-Compromised Persons: 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. EPA/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)

Source Water Assessment

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Protection Report and Summary for this public water system, which is available at www.nj.gov/dep/watersupply/swap/creport.htm or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550.

The table below illustrates the susceptibility rating for each individual source for each of the contaminant categories at this water system. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report. NJDEP considered all surface water highly susceptible to pathogens. For the purpose of the Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. If the system is rated highly susceptible for a contaminant category, it does not mean that a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, NJDEP may customize (change existing) monitoring schedules based on the susceptibility ratings. If you have questions regarding the source water assessment report or summary, please contact the Bureau of Safe Drinking Water at 609-252-5550.

Source ID/ Name	Pathogens	Nutrients	Pesticides	VOCs	Inorganics	Radionuclides	Radon	DBPs
	Rating	Rating	Rating	Rating	Rating	Rating	Rating	Rating
003/Well 1	M	H	L	H	M	M	H	H
005/Well 3	M	H	L	H	M	M	H	H
008/Well 8	M	H	L	H	M	M	H	H

Susceptibility ratings for a public water system are based on the potential for a contaminant to be:

- At or above 50% of the Drinking Water Standard (MCL) = (H) High
- Between 10 and 50% of the Drinking Water Standard (MCL) = (M) Medium
- Less than 10% of the Drinking Water Standard (MCL) = (L) Low

DOVER WATER DEPARTMENT QUALITY TABLE

Contaminant	MCL VIOLATION (Y/N)	Level Detected DOVER WATER NJ140901	Level Detected Randolph Twp/ Morris Cty MUA NJ1432003/ NJ1432001	Unit of Measure	MCL (Highest Level Allowed)	MCLG (GOAL)	Potential Source
Lead Result at 90th Percentile	N	7 2 samples exceeded the action level Year: 2018	3 1 sample exceeded the action level Year: 2017	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural Deposits.
Copper Results at 90th Percentile	N	0.1 No samples exceeded the action level Year: 2018	0.16 No samples exceeded the action level Year: 2017	ppm	1.3 (Action limit)	1.3	Corrosion of household plumbing.
Nitrate	N	Range = 1.0 - 1.1 Highest detect = 1.1	Range 0.8-3 Highest detect = 3	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits.
Chromium Test Results Year: 2017	N	Range = 1.1 - 1.4 Highest 1.4	Range = ND - 1.1 Highest 1.1	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Selenium Test Results Year: 2017	N	Range = ND Highest ND	Range = ND - 1 Highest 1	ppb	50	50	Discharge from petroleum and metal refineries; erosion
Barium Test Results Year: 2017	N	Range = 0.6—0.8 Highest = 0.8	Range = 0.001-0.05 Highest = 0.05	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Gross Alpha	N	Range: ND Highest :ND Year:2017	Range:ND-4 Highest: 4 Year:2016	pCi/L	15	0	Radiological: Erosion of natural deposits
Combined Radium Test Results Year: 2014	N	Range = ND - 2.7 Highest Detect = 2.7 Year: 2014	Range: ND Highest: ND Year: 2016	pCi/L	5	0	Radiological: Erosion of natural deposits
THM Stage 2	N	Highest LRAA:15 Range: 8-15	Highest LRAA: 4 Range: 1-4	ppb	80	N/A	Disinfectant Byproducts
HAA5 Stage 2	N	Range: 2-6 Highest LRAA: 6	Range: ND-2 Highest LRAA: 2	ppb	60	N/A	Disinfectant Byproducts
Chlorine Residual	N	Range: ND-0.79 Average: 0.25	Range: 0.27-0.48 Average: 0.4	ppm	4	4	Water additive used to control microbes
Beryllium Results Year: 2017	N	Range:0-0.1 Highest: 0.1	ND	ppb	4	4	Discharge from metal refineries and coal burning factories; discharge from electrical, aerospace, and defense industries.
Fluoride Results year: 2017	N	Range: ND Highest: ND	Range: ND - 0.12 Highest: 0.12	ppm	4	4	Erosion of natural deposits
Nickel Results year: 2017	N	Range: ND Highest: ND	Range: ND - 2 Highest: 2	ppb	100	100	Erosion of natural deposits; found in Earth's crust.

Secondary Contaminants

Contaminant	Level Detected DOVER WATER NJ140901	Level Detected Randolph Twp/ Morris Cty MUA NJ1432003/	Unit Of Measure	RUL	Potential Source
Aluminum Results Year: 2017	Range: ND - 0.2 Average: 0.1	Range:0.001-0.004 Average: 0.002	ppm	0.2	Naturally Occurring
Chloride Results Year: 2017	Range: 119 -146 Average: 132	Range:8-94 Average: 29	ppm	250	Naturally Occurring
Hardness Results Year: 2017	Range: 217-243 Average: 230	Range:56-152 Average: 93	ppm	250	Naturally Occurring
Sodium Results Year: 2018	Range:63-78 Average: ND	Range:63-78 Average: 69	ppm	50	Naturally Occurring

Secondary Contaminants Continued

Contaminant	Level Detected DOVER WATER NJ140901	Level Detected Randolph Twp/ Morris Cty MUA NJ1432003/	Unit Of Measure	RUL	Potential Source
Sulfate Results Year: 2017	Range:15 - 17 Average: 16	Range: ND - 15 Average: 10	ppm	250	Naturally Occurring
Total Dissolved Solids Results Year: 2017	Range:379 - 412 Average: 396	Range: 96 -192 Average: 141	ppm	500	Naturally Occurring
Manganese	Range:ND	Range: ND - 1.3	ppm	50	Naturally Occurring

Health Effects of Detected Contaminants

Aluminum: Large aluminum intake may be connected with nerve damage. Particularly people with kidney damage are susceptible to aluminum toxicity and there is a risk of allergies. A correlation between aluminum uptake and an increased number of Alzheimer case is suspected. Increased aluminum intake may also cause osteomalacia.

Barium: Barium is a naturally occurring ore used in a variety of manufactured goods. The EPA has found that in some people, short exposure to Barium in exceedance of the MCL can cause gastrointestinal disturbances and muscle weakness. Long term exposure to barium at levels above the MCL may cause high blood pressure.

Beryllium: Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

Chloride: Chloride occurs naturally in water and is monitored as a secondary contaminant. Secondary contaminants are aesthetic (taste and odor) rather than health risks; however, in high concentrations sulfate can cause Diarrhea in some people.

Chlorine: 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 well in excess of the MRDL could experience stomach discomfort.

Chromium: Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

Copper: Copper is an essential nutrient, but some people who drink water that contains copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water that contains copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Fluoride: Infants and children: delays in physical or mental development; children could show slight deficits in attention span and learning abilities. Adults: Kidney problems; high blood pressure.

Gross Alpha (48 Hour): Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

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

Hardness: Water hardness is the traditional measure of the capacity of water to react with salt and producing lather. Hard water often produces a noticeable deposit of precipitate (e.g. insoluble metals, soaps or salts) in containers, including "bathtub ring".

Lead: 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. Dover 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 and 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>.

Manganese: The recommended upper limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

Nickel: Some who drink water containing nickel in excess of the MCL over many years may experience liver effects.

Nitrate: 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, you should ask for advice from your health care provider.

Radium: Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increase risk of cancer.

Secondary Contaminant: These parameters do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Selenium: Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

Sodium: We exceeded the secondary Recommended Upper limit for Sodium. For healthy individuals the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the Recommended Upper Limit (RUL) may be of concern to individuals on a sodium restricted diet

Sulfate: Sulfate occurs naturally in water and is monitored as a secondary contaminant. Secondary contaminants are aesthetic (taste and odor) rather than health risks; however, in high concentrations sulfate can cause Diarrhea in some people.

THMs (Trihalomethanes): 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.

Total Dissolved Solids: (TDS) in drinking water is not a health hazard. The recommended upper limit has been established based on the aesthetic properties of water. Water high in TDS may taste salty or brackish. High TDS may also indicate that other ions naturally present in water may be above established regulatory levels.

Definitions:

Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals and elements that aid growth, and are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds (VOCs): Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call 800-648-0394.

(DBPs) Disinfectant Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when other disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

How to read this report:

Y/N: Yes/No

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

CDC: Centers for Disease Control

EPA: United States Environmental Protection Agency

LRAA: Location Running Annual Average

MCL or Maximum Contaminant Level: 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.

MCLG or Maximum Contaminant Level Goal: 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.

MRDL or Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water.

MRDLG or Maximum Residual Disinfectant Level Goal : 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.

N/A: Not applicable

NJDEP: New Jersey Department of Environmental Protection.

ND: Not detected.

ppb or parts per billion: Micrograms per liter (ug/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

ppm or parts per million: Milligrams per liter (mg/L). One part per million corresponds to one minute in two years, or a single penny in \$10,000.

RAA: Running Annual average

RUL: Recommended Upper limit

Report prepared for the Dover Water Department by:
Agra Environmental & Laboratory Services, 90 1/2 West Blackwell St., Dover, NJ 07801
Phone: (973) 989-0010
Fax: (973) 989-0156