



PLAINVIEW WATER DISTRICT

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Plainview Water District 1,4-dioxane and Drinking Water Concerns Fact Sheet

The District's commitment to water quality

The Plainview Water District's commitment to providing the community with high-quality water is unwavering. We take an immense amount of pride in providing residents throughout the Plainview-Old Bethpage area with water that meets or surpasses all federal, state and local standards. Our foremost priority is the health and safety of the communities we serve, and we will go to any length necessary to ensure our mission is satisfied.

What is 1,4-dioxane?

1,4-dioxane is a synthetic chemical historically used as a stabilizer for industrial solvents, predominantly 1,1,1-trichloroethane (TCA). Although use of TCA was phased out under the 1995 Montreal Protocol and using 1,4-dioxane as a solvent stabilizer has since stopped, 1,4-dioxane is long-lasting in the environment and is present in groundwater as a legacy of industrial manufacturing. Apart from its use as a solvent stabilizer, it is used in small concentrations in a variety of applications, such as inks and adhesives. It is also found in trace amounts in products such as cosmetics, detergents, and shampoos.

How does 1,4-dioxane get into drinking water?

Plainview Water District, like the other public water providers on Long Island, relies on groundwater for its drinking water supply. 1,4-dioxane has reached that groundwater primarily because of industrial manufacturing operations on Long Island that used TCA stabilized by 1,4-dioxane from the 1950s to 1990s. Once dioxane reached the ground from routine spills or disposal straight to the soil, it could migrate to the groundwater and persist for many years. Additionally, trace amounts of 1,4-dioxane present in everyday household products—like shampoo, for example—also get washed down the drain and seeps into the ground and, eventually, Long Island's aquifer.

Is 1,4-dioxane regulated?

There is currently no chemical-specific Federal or New York State drinking water standard for 1,4-dioxane. The U.S. Environmental Protection Agency (EPA) has listed 1,4-dioxane as a probable

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human carcinogen, but at present the EPA has no plans for establishing water quality standards for the compound.

The New York State Department of Health (NYSDOH) currently regulates 1,4-dioxane as an Unspecified Organic Contaminant (UOC). UOC's have a blanket Maximum Contaminant Level (MCL) of 50 parts per billion (ppb).

In December of 2018, the New York State Drinking Water Quality Council (DWQC) proposed a recommended drinking water quality MCL of 1.0 part per billion (ppb). On July 8, 2019, Governor Cuomo and the New York State Department of Health Commissioner, Dr. Howard Zucker, announced that the recommendations by the DWQC were accepted, and the 60-day public comment period began on July 24, 2019. The public comment period ended on September 22, 2019, and implementation of a standard or MCL could occur by early 2020.

Governor Cuomo recently stated: "We're proposing the most protective levels in the nation for three emerging contaminants to ensure we are regularly testing and fixing water systems before they ever rise to a public health risk in any part of the state. New York State will continue to lead in the absence of federal action by ensuring all residents have access to clean drinking water and by investing in critical projects to assist municipalities in treating these emerging contaminants".

The NYSDOH, which has proposed a 1 part per billion (ppb) standard for 1,4-dioxane in drinking water, [defines the unit of measurement](#) as follows: "One ppb means that there is one part of a substance for every billion parts of substance and the medium containing it. One ppb is about one drop of dye in 18,000 gallons of water or about 1 second in 32 years."

What actions are being undertaken by the Water District to address 1,4-Dioxane?

Locally:

In addition to sampling for 1,4-dioxane in PWD's wells, PWD's commissioners have authorized additional proactive actions by the District, including:

- Actively piloting advanced treatment technologies for the removal of 1,4-dioxane through the Center for Clean Water Technology (CCWT) at Stony Brook University. This vital pilot program will study two types of Advanced Oxidation Processes (AOP) in conjunction with another District on Long Island. AOP is the most promising type of treatment for the removal of 1,4-dioxane from potable water systems.
- Actively piloting for AOP systems at three other Plant sites to treat for 1,4-dioxane.
- Production of educational materials including consumer fact sheets, newsletters and website resources to provide information in order to keep residents updated on the District's aggressive action to comply with impending regulation.
- Pursuing litigation—along with 23 other Long Island water providers—to hold the manufacturers of 1,4-dioxane accountable because the District firmly believe residents should not be held liable for the expense of cleaning up the mess left behind by polluters.
- Pursuing any and all potential funding sources to keep costs of needed treatment upgrades as low as possible for residents.

The District has already received some funding to pursue the various 1,4-dioxane pilot programs, including the recent award of a design and planning grant to construct additional 1,4-dioxane treatment. In addition, we are in the process of submitting an additional application to the State for the maximum of \$3

million annually. In total, PWD has been awarded more than five million dollars in grant funding for water treatment projects, which includes treatment pilots for the removal of 1,4-dioxane, but does not include money for ongoing operations, maintenance, testing and upgrades.

These advanced piloting and planning operations will place the District in a very favorable position to implement wellhead treatment as quickly as possible.

Regionally:

The PWD is partnering with organizations, such as the Long Island Water Conference and various environmental and community organizations, to improve public education and gather support for initiatives to stop the inclusion of the chemical in consumer products. As noted, the PWD is also one of many Long Island water districts pursuing legal action against polluters and manufacturers to better protect our ratepayers.

How do water suppliers treat for 1,4-Dioxane?

The most effective method of treatment available for the removal of 1,4-dioxane from our groundwater is a process known as Advanced Oxidation Process or AOP. An additive such as hydrogen peroxide is introduced into the raw well water and pumped through an ultraviolet (UV) reactor where the UV lights react with the additive to destroy the 1,4-dioxane molecule. Granular Activated Carbon (GAC) vessels are needed at the end of the treatment sequence to remove any hydrogen peroxide in the water before it enters the distribution system.

When will treatment be implemented?

There are many things that are beyond the control of water suppliers since new and yet-to-be-proven treatment systems will be required. This will impact how long treatment implementation will take, given the need for special, customized treatment equipment and appropriately skilled contractors and engineers, as well as analytical lab capacity. Comprehensive testing and quality control are required for 1,4-dioxane treatment removal because of the specialized treatment process.

Groundwater differs from site-to-site and treatment pilots are required by the Health Departments at each individual water plant site. Since AOP is a new treatment technology, systems need to be piloted and tested before Districts can obtain Health Department approval, which can be an expensive and time-consuming process.

PWD is undertaking proactive actions to implement effective wellhead treatment as soon as possible. All levels of government must step up to ensure Long Island has access to sufficient quantities of customized treatment equipment, along with the skilled contractors, engineers, operators and analytical lab capacity needed to meet any new mandate.

Needless to say, the Plainview Water District believes strongly that our water should be of the highest quality and free from all possible harmful contaminants.

What about home water treatment devices and bottled water?

At present there are no NSF or UL certified home water treatment devices available for the removal of 1,4-dioxane. Regulations for 1,4-dioxane in bottled water (which are enforced by the Food and Drug

Administration) have not been developed. Bottled water manufacturers may have specific information on 1,4-dioxane levels for their products.

Where can I find more information about 1,4-dioxane?

- Governor Cuomo's press release July 8, 2019
<https://www.governor.ny.gov/news/governor-cuomo-announces-availability-350-million-water-system-upgrades-statewide-and-directs>
- US EPA Technical Fact Sheet 1,4-Dioxane. https://www.epa.gov/sites/production/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf
- US EPA Integrated Risk Information System (IRIS). <http://www.epa.gov/iris/subst/0326.htm>
- Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs fact sheets.
<http://www.atsdr.cdc.gov/toxfaqs/tfacts187.pdf>
- Water Research Foundation. "1,4-Dioxane White Paper."
<https://www.savmn.com/DocumentCenter/View/290/14-Dioxane-White-Paper-from-the-Water-Research-Foundation-PDF>
- National Institute for Occupational Safety and Health (NIOSH). "Dioxane - NIOSH Pocket Guide to Chemical Hazards". <https://www.cdc.gov/niosh/npg/npgd0237.html>

Where can I find information about Plainview Water District's water quality?

Our tap water continues to be of the highest quality possible and is safe to drink. Residents can access each annual water quality report from the District's website, www.plainviewwater.org. For additional information, please visit the UPSEPA's website at www.epa.gov, or contact the Plainview Water District at (516) 931-6469 or at info@plainviewwater.org.