

1,4-Dioxane

What is 1,4-Dioxane?

1,4-Dioxane is a synthetic industrial chemical previously used as a stabilizing agent for chlorinated solvents, such as Trichloroethane (TCA).

How does 1,4-Dioxane get in my water?

1,4-Dioxane is not natural. For many decades, Lansing was the heart of industry and industrial waste was not heavily regulated resulting in the potential for the water supplies to be impacted by leakage, poor storage or inadequate disposal practices.

Is 1,4-Dioxane in drinking water a concern?

The EPA has identified 1,4-Dioxane as “likely to be carcinogenic to human[s].” The EPA currently has a risk assessment level for 1,4-Dioxane of 0.35 ppb. The EPA concludes that a lifetime exposure over this level may lead to 1 in a million people having negative health impacts or getting cancer.

The EGLE has established a drinking water cleanup standard for contaminated sites of 7.2 ppb.

Is there 1,4-Dioxane in my water?

The BWL has two water conditioning plants; Dye and Wise. The BWL initially monitored for 1,4-Dioxane under the UCMR3 in 2015. Our Dye water conditioning plant showed trace levels of 1,4-Dioxane at 0.14 ppb, less than half the EPA’s risk assessment level, 0.35 ppb, and approximately 50 times lower than the EGLE Part 201 clean-up standard. Our Wise water conditioning plant showed no 1,4-Dioxane. 1 ppb is equivalent to 1 drop of water in an Olympic size swimming pool. *See table below for results.*

What are the steps the BWL has or is taking?

The BWL discussed the findings with EGLE, developed an action plan and continues to monitor Dye on a quarterly basis. Quarterly monitoring has shown no significant change in the levels detected. Although the levels in our drinking water are trace, based on the number of industrial sources in our area we feel it is important to continue to monitor the levels so that timely action can occur if needed.

For further information about 1,4-dioxane, please visit:

DrinkTap: <https://drinktap.org/Water-Info/Whats-in-My-Water/Dioxane>

CDC: <https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=199>
<https://www.atsdr.cdc.gov/ToxProfiles/tp187-c1-b.pdf>

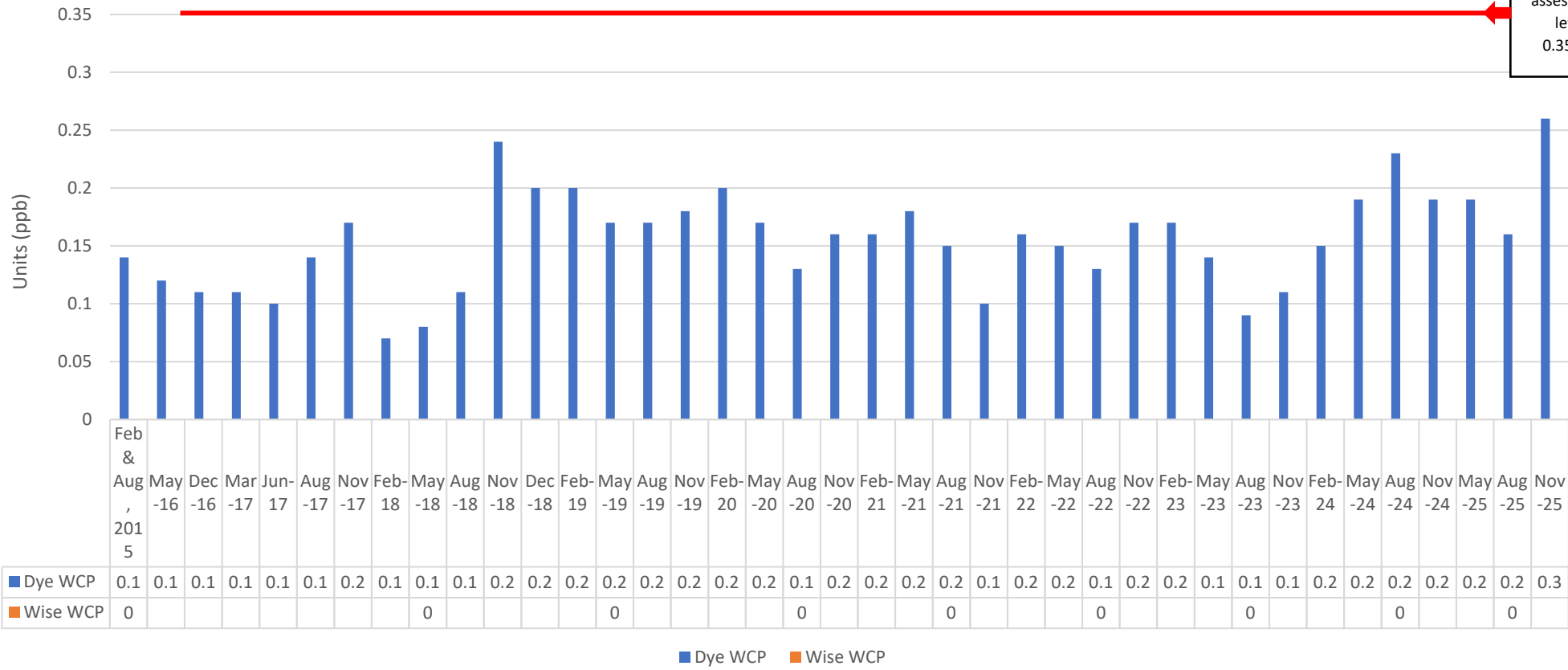
BWL 1,4-Dioxane Results:

	Dye	Wise	Reporting Limit*	Units
Feb & Aug, 2015	0.14	Non-Detect	0.07	ppb
May 2016	0.12	Not Sampled	0.07	ppb
Dec 2016	0.11	Not Sampled	0.07	ppb
March 2017	0.11	Not Sampled	0.07	ppb
June 2017	0.10	Not Sampled	0.07	ppb
Aug 2017	0.14	Not Sampled	0.07	ppb
Nov 2017	0.17	Not Sampled	0.07	ppb
February 2018	0.07	Not Sampled	0.07	ppb
May 2018	0.08	Non-Detect	0.07	ppb
Aug 2018	0.11	Not Sampled	0.07	ppb
Nov 2018	0.24	Not Sampled	0.07	ppb
Dec 2018	0.20	Not Sampled	0.07	ppb
Feb 2019	0.20	Not Sampled	0.07	ppb
May 2019	0.17	Non-Detect	0.07	ppb
Aug 2019	0.17	Not Sampled	0.07	ppb
Nov 2019	0.18	Not Sampled	0.07	ppb
Feb 2020	0.20	Not Sampled	0.07	ppb
May 2020	0.17	Not Sampled	0.07	ppb
Aug 2020	0.13	Non-Detect	0.07	ppb
Nov 2020	0.16	Not Sampled	0.07	ppb
Feb 2021	0.16	Not Sampled	0.07	ppb
May 2021	0.18	Not Sampled	0.07	ppb
Aug 2021	0.15	Non-Detect	0.07	ppb
Nov 2021	0.10	Not Sampled	0.07	ppb
Feb 2022	0.16	Not Sampled	0.07	ppb
May 2022	0.15	Not Sampled	0.07	ppb
Aug 2022	0.13	Non-Detect	0.07	ppb
Nov 2022	0.17	Not Sampled	0.07	ppb
Feb 2023	0.17	Not Sampled	0.07	ppb
May 2023	0.14	Not Sampled	0.07	ppb
Aug 2023	0.09	Non-Detect	0.07	ppb

Nov 2023	0.11	Not Sampled	0.07	ppb
Feb 2024	0.15	Not Sampled	0.07	ppb
May 2024	0.19	Not Sampled	0.07	ppb
Aug 2024	0.23	Non-Detect	0.07	ppb
Nov 2024	0.19	Not Sampled	0.07	ppb
May 2025	0.19	Not Sampled	0.07	ppb
Aug 2025	0.16	Non-Detect	0.07	ppb
Nov 2025	0.26	Not Sampled	0.07	ppb
<p>*A Reporting Limit is the limit of detection for a specific target analyte</p> <p>Note: Aug 2024 Wise Rd showed 1,4-dioxane at 0.077 ppb, a resample was performed and it was non-detect.</p>				

BWL 1,4-Dioxane

EPA's risk
assessment
level
0.35ppb



Per and Polyfluoroalkyl Substances (PFAS)

There is heightened concern regarding the presence of per and polyfluoroalkyl substances (PFAS), such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) contaminating drinking water supplies across the country. Recent news reports about PFAS in the upper (less than 20 feet) groundwater aquifer near the Adams Plating Superfund Site and adjacent RACER Trust locations (former General Motors Plants 2, 3 and 6) has increased inquiries among customers in our service area. The Lansing Board of Water & Light (BWL) draws water from the deeper Saginaw Aquifer, approximately 400 feet underground.

What is PFAS?

A group of man-made chemicals that includes PFOA, PFOS, GenX and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including the United States since the 1940s.

Where can PFAS be found?

PFAS have been used in non-stick cookware, water-repellent clothing, stain resistant fabrics and carpets, some cosmetics, some firefighting foams, and products that resist grease water and oil. PFAS can be found near areas where they are manufactured or where products containing PFAS were often used, such as Adam's Plating and Racer Trust. PFAS can travel long distances, move through soil, seep into groundwater or be carried through air.

How does PFAS get in my water?

PFAS is not natural. For many decades, Lansing was the heart of industry, and the water supplies can be impacted by leakage, poor storage or inadequate industrial waste disposal practices.

Is PFAS in drinking water a concern?

There is still a great deal unknown about the health impacts of PFAS. Some studies have linked PFAS exposure to several negative health effects. Seven (7) PFAS compounds became regulated in Michigan in 2020 and in 2024 the EPA has established regulations for six (6) PFAS compounds. The MCL is the level, or amount, below which no harm is expected from these chemicals.

Is there PFAS in my water?

The BWL has monitored for PFAS since 2015 and continues to monitor annually and no PFAS compounds have been detected. *See table below for results.*

What are the steps the BWL has or is taking?

The BWL will continue to monitor our finished drinking water for PFAS and partner with potential known contaminated sites identified by EGLE in Lansing to recommend measures to protect our water supply.

For further information about PFAS, please visit:

DrinkTap: <https://drinktap.org/Water-Info/Whats-in-My-Water/Perfluorinated-Compounds>

EGLE: <https://www.michigan.gov/pfasresponse/>

EPA: <https://www.epa.gov/pfas/epa-pfas-research>

CDC: <https://www.atsdr.cdc.gov/pfas/index.html>

BWL PFAS (combined PFOS and PFOA) Results:

	Dye	Wise	Reporting Limit*	Units
Feb & Aug, 2015 (UCMR)	Non-Detect	Non-Detect	60	ppt
March 2018	Non-Detect	Non-Detect	2	ppt
July 2018 (BWL)	Non-Detect	Non-Detect	2	ppt
July 2018 (MDEQ)	Non-Detect	Non-Detect	2	ppt
July 2019	Non-Detect	Non-Detect	2	ppt
Oct 2020 (Compliance)	Non-Detect	Non-Detect	2	ppt
July 2021 (Compliance)	Non-Detect	Non-Detect	2	ppt
July 2022 (Compliance)	Non-Detect	Non-Detect	2	ppt
July 2023 (Compliance)	Non-Detect	Non-Detect	2	ppt
Feb & Aug, 2024 (UCMR)	Non-Detect	Non-Detect	2	ppt
July 2024 (Compliance)	Non-Detect	Non-Detect	2	ppt
July 2025 (Compliance)	Non-Detect	Non-Detect	2	ppt

*A **Reporting Limit** is the **limit** of detection for a specific target analyte.