

**O.Reg. 206/24 – Air Pollution – Discharge of Benzene from INEOS Styrolution  
Hourly (January 30 & 31, 2025) and 24-hour Benzene Exceedances (January 31, 2024)**

Ontario Regulation 206/24: Air Pollution – Discharge of Benzene from INEOS Styrolution (“O.Reg. 206/24”) requires a report to be submitted to the District Manager of the Ministry of the Environment, Conservation and Parks’ (“MECP”) Sarnia District Office, the Chief of the Aamjiwnaang First Nation (“AFN”), and the Ministry’s Spills Action Centre within 14 days after an exceedance notification. This report describes the benzene concentration measured at eGC#3 above 90 µg/m<sup>3</sup> over any hour that occurred on January 30 & 31, 2025 and above 30 µg/m<sup>3</sup> over the preceding 24-hour period on January 31, 2025 (MECP Reference #1-GS5DJ3).

This report contains the information requested in the regulation to the best of our abilities, with the understanding that eGC emission contributors cannot be considered with 100% certainty, as it is difficult to find exact source of emissions from such low concentrations. However, INEOS Styrolution has made every effort reasonable to attempt to identify any potential processes, events and/or sources from onsite activities during this period that may have contributed to the final value. The attached table summarizes these findings.

Please note that eGC#3 is located on the east side of the Styrene II plant within the boundaries of the site and does not represent actual offsite/fenceline concentrations.

**Summary of Hourly Exceedances on January 30 - 31, 2025:**

Time Period	Measured Benzene Concentration (Rolling Hourly Average - µg/m <sup>3</sup> )	Wind Direction	Wind Speed (km/hr)
19:46	97.98	SSW	11.41
20:46	94.75	S	12.22
23:56	90.79	SSW	10.26
01:16	118.9	SSW	7.96
02:16	124.86	S	7.33

**Summary of 24-hour Exceedance on January 31, 2025 (for preceding 24-hours):**

Time Period	Measured Benzene Concentration (Rolling 24-hour Average - µg/m <sup>3</sup> )	Wind Direction	Wind Speed (km/hr)
02:06	32.21	S	7.78

**Analysis of the Contravention:**

Upon receiving the exceedance alert at 20:00 on January 30, 2025, an investigation ensued and continued through the night to eliminate potential sources of elevated benzene emissions. INEOS Styrolution had previously provided notification of potential increased benzene emissions due to solids removal from frac tanks on site during the daytime. At the time of the exceedance, there was no work on-going at the frac tanks and no evidence linking the frac tanks to the alerts. However, as a precautionary measure, additional tightening/sealing of Frac Tank #4 fittings and monitoring of the Carbon Adsorption Control System was performed to potentially help reduce emissions and the elevated readings at eGC #3.

Further investigation by Operations discovered elevated emissions coming from a flange, at the top of tank MT303, connected on the suction line of the tank to the Thermal Oxidizer. Operations reduced pressure on tank MT303 taking the tank from slight positive to negative pressure and then tightened the flange bolts. This reduced the readings at eGC #3 and ceased all alerts. MT303 is a benzene storage tank at the Styrene II site. As per Provincial Officer's Order (1-208079516) a thermal oxidizer was installed on tank MT303 designed with benzene destruction efficiency of 99.9% on November 30, 2023, and the tank was completely enclosed in October 2024 to further support emission reduction. Operations remain shut down and idle during the time period of January 30 - 31, 2025. The thermal oxidizer with its 99.9% destruction efficiency paired with complete enclosure has assisted with keeping emission levels well below the hourly benchmark of 90 µg/m3 and below 30 µg/m3 over a 24 hour period for majority of the time. However, completely enclosing the tank has resulted in benzene accumulation in the headspace of the tank. The operating range for the pressure in the tank was set within limits to eliminate activating the new PVRV on the tank, but operating with slight positive pressure on the tank is believed to be linked to occasional elevated readings at eGC #3 and #4.

Consequently, the site has adjusted operating conditions and monitoring practices for MT303 Thermal Oxidizer to more effectively maintain negative pressure on tank MT303 with careful consideration to LEL and Temperature trip monitoring. The enhanced monitoring and operational improvements are believed to effectively reduce the possibility of reoccurrence.

Corrective Action:	Implementation Date:
Investigation initiated after first exceedance alert.	January 30, 2025. No contributing factors found but increased controls monitoring and seals tightening on frac tank #4 as a precaution.
Investigation continued around tank MT303 to find any other potential sources of benzene that may have contributed to this exceedance.	January 31, 2025. Elevated emissions coming from a flange, at the top of tank MT303, connected to the suction line to the TO discovered.
Reduced pressure on tank MT303 to slight negative pressure and tightened the flange bolts.	January 31, 2025. Reduced the pressure at tank MT303, reduced the readings at eGC#3 and ceased all alerts.
Adjust operating conditions monitoring and actions for MT303 TO to effectively maintain negative pressure on tank MT303 and reduce benzene emissions.	Operating adjustments made on January 31, 2025.