O.Reg. 206/24 – Air Pollution – Discharge of Benzene from INEOS Styrolution Hourly (March 19, 2025)

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^3 over any hour that occurred on March 19, 2025 (MECP Reference #1-KFC800).

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.

Summary of the Hourly Exceedance on March 19, 2025:

Time Period	Measured Benzene Concentration (Rolling Hourly Average - µg/m^3)	Wind Direction	Wind Speed (km/hr)
12:00	30.82	SSW	18.22

Analysis of the Contravention:

On March 19, 2025, at 12:00 the site received an exceedance alert from eGC#3. eGC#3 is located on the east side of Styrene II (see Figure 1) next to the hazardous waste laydown area. During this period, the site continues to be shutdown/idled with limited activity that would produce benzene emissions. Operations and monitoring technicians checked the area for potential sources of elevated benzene emissions. Various areas around eGC#3 (frac tanks, tanks, blower system, PP306 pumps) were checked and no measurable readings were detected. At this same time a frac tank in the hazardous waste laydown down area was being loaded with I-5 water. No elevated emissions were observed by the monitoring technician around this location.

Earlier that same morning, around 10:00, the Thermal Oxidizer at MT303 was undergoing maintenance which required a brief shutdown to troubleshoot an instrument. After approximately forty-five minutes the work on the Thermal Oxidizer was complete and the unit restarted. MT303 remained in negative pressure the entire duration of the Thermal Oxidizer being shut down and no elevated emissions were detected.

Consequently, no root cause was determined at that time; however, operations and monitoring technicians continued conducting routine walkthroughs and monitoring of the unit, inspecting for any potential leak sources.

On March 27th the site noted elevated eGC#3 readings (spikes though not an exceedance). Upon further investigation, a loose LEL sensor connection on the MT303 Thermal Oxidizer was found with elevated readings and was tightened, and elevated readings were no longer visible. It is believed that this was the likely contributor to the exceedance on March 19th and could have been transient at that point due to startup conditions of the thermal oxidizer. For reference, MT303 is a benzene storage tank at the Styrene II site that utilizes a thermal oxidizer with destruction efficiency of 99.9% to control emissions.

Corrective Action:	Implementation Date:
Investigation initiated after the exceedance alert.	March 19, 2025, 12:00: No contributing factors found.
Elevated readings (spikes below exceedance levels) at eGC#3 were noted on March 27, 2025, at 09:00. Further investigation uncovered that the LEL sensor fitting on MT303 TO had a loose connection and elevated handheld benzene readings were detected.	March 27, 2025, at 11:00: Tightened the sensor fitting. Reduced readings around MT303 Thermal Oxidizer skid area and elevated readings at eGC#3 ceased. The LEL connection was believed to be the cause of the March 19, 2025, exceedance. The tightening of the fitting should solve the problem.

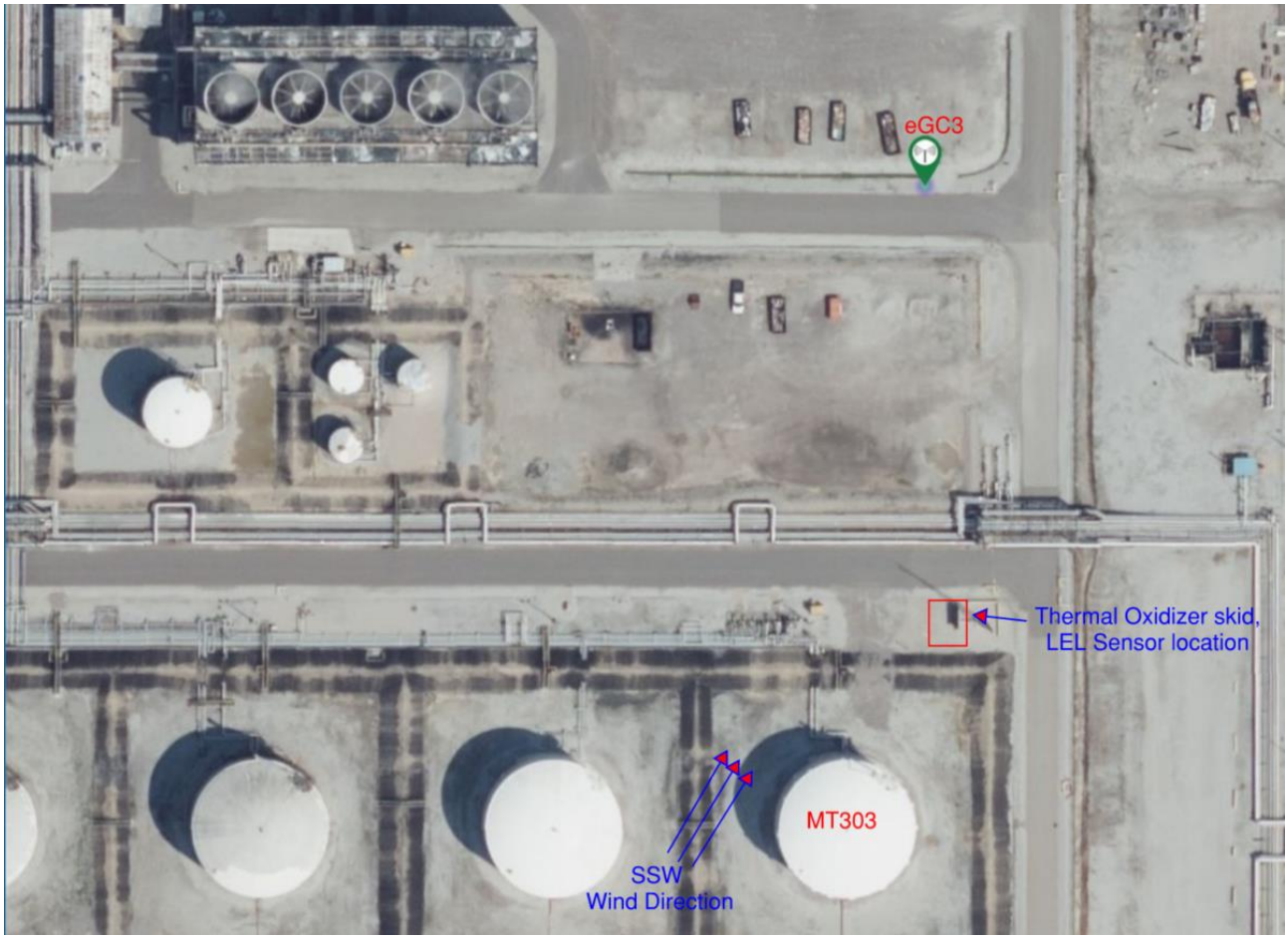

Figure 1: Aerial View of the Therma Oxidizer, eGC#3, and tank MT303 (includng wind direction)