

**AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 8903-AD5HPV  
Notice No. 2  
Issue Date: May 1, 2024

INEOS Styrolution Canada Ltd.  
872 Tashmoo Ave  
Post Office Box, No. 3078  
Sarnia, Ontario  
N7T 8A3

Site Location: Styrene I  
1265 Vidal Street South  
Sarnia City, County of Lambton  
N7T 7M2

Styrene II  
872 Tashmoo Avenue  
Sarnia City, County of Lambton  
M7T 7H5

You are hereby notified that, pursuant to my authority under section 20.13(c) of the *Environmental Protection Act* (“EPA”), I have suspended Condition 1.1 relating to the operation of a hydrocarbon storage facility located at Styrene I and a styrene and ethylbenzene production and hydrocarbon storage facility located at Styrene II in Environmental Compliance Approval No. 8903-AD5HPV (the “Air ECA”) issued to INEOS Styrolution Canada Ltd. (“INEOS”). This suspension will remain in place until I am satisfied that Conditions 1.2, 1.5 and 1.6 in the Air ECA, as amended on May 1, 2024, have been met.

The following outlines the grounds on which my decision to suspend is based:

- (a) INEOS is a registrant to the Ministry of the Environment, Conservation and Parks (“Ministry”)’s Technical Standards Registry – Air Pollution in respect of the Petrochemical Industry Standard (“PCIS”). As a registrant, INEOS is exempt from the requirements to comply with the annual air

standard for benzene of  $0.45 \mu\text{g}/\text{m}^3$  set out in Schedule 3 of O. Reg. 419/05 under the EPA.

- (b) Despite the requirements of the PCIS, the Ministry continues to be concerned with the elevated levels of benzene being discharged from the Styrene I and Styrene II sites and the potential impacts on nearby communities, in particular, the Aamjiwnaang First Nation (“AFN”) which is located directly south of the Styrene II site.
- (c) Between 2019 and 2023, the Ministry has issued three orders to the INEOS to prevent or reduce the ongoing discharge of benzene from the Styrene I and II sites.
  - a. In 2019, a provincial officer’s order and director’s order were issued that required INEOS to conduct a leak detection and repair report and action plan, to identify sources of benzene on site, and to require the company to submit a benzene reduction plan which set property line monitoring benchmarks of  $30 \mu\text{g}/\text{m}^3$ .
  - b. In 2020, a provincial officer’s order was issued that required INEOS to install a temporary thermal oxidizer on Tank 8 at Styrene I by Spring 2021, and to investigate long-term abatement options to reduce benzene from Tank 8 at Styrene I and Tank 303 at Styrene II.
  - c. In 2023, a provincial officer’s order was issued that required INEOS to install, commission and use a temporary thermal oxidizer on Tank 303 on Styrene II by November 2023 and permanent vapour controls on its primary benzene storage tank, Tank 302 at Styrene II by October 2024. The order also required INEOS to notify the ministry prior to planned turnarounds, implement additional real-time air monitors to identify benzene sources, update its Air Monitoring Strategy to include the use of at least 5 ENMET environmental gas chromatographs for property line monitoring and identifying benzene sources, and to implement procedures to notify members of the public of elevated benzene levels measured by the equipment.
- (d) Despite the requirements of the PCIS, the 2019 order, the Benzene Reduction Plan, and the 2020 order, in 2022 and 2023 there were periods of significantly elevated benzene concentrations measured at both the Styrene II site's property line and at real-time monitors located within the AFN community.
- (e) In December 2023, the Ministry’s Technical Assessment and Standards Development Branch provided a document entitled “Technical Backgrounder: Interim Advice on Interpreting Short-term Exposures to Benzene, 2023” to the Ministry Southwest Regional Director (the “Technical Backgrounder”). The Technical Backgrounder contained a review of the science basis of short-term benchmarks used by various jurisdictions to assess health risks from acute exposures to benzene in air. Based on that review, the Technical Backgrounder sets out the following interim advice for toxicological interpretation of short-term benzene exposures when the ambient air quality criterion or air standard for benzene is not met:
  - i. Risks of an adverse non-cancer effect from short-term exposures are considered negligible if the 1-hour concentration of benzene does not exceed  $90 \mu\text{g}/\text{m}^3$  and the 24- hour concentration does not

exceed  $30 \mu\text{g}/\text{m}^3$ .

ii. If concentrations of benzene exceed either  $90 \mu\text{g}/\text{m}^3$  over 1 hour or  $30 \mu\text{g}/\text{m}^3$  over 24 hours, then risks of an adverse effect (blood toxicity or hematotoxicity) are elevated. It does not mean that an adverse effect will occur but does mean that risks increase as concentrations increase above these protective levels.

- (f) Since January 2024, there have been a number of instances of elevated benzene concentrations measured at the monitoring station within the AFN community (the Ada (Lockridge) Rogers station known as AP1) that exceed either  $90 \mu\text{g}/\text{m}^3$  over 1 hour or  $30 \mu\text{g}/\text{m}^3$  over 24 hours, including a concentration level of  $117.8 \mu\text{g}/\text{m}^3$  on April 16, 2024. As a result of these elevated levels, all AFN staff members were advised on that date to leave AFN office buildings located in the northern area of the AFN community and work from home.
- (g) On April 18, 2024, a fourth provincial officer's order was issued in response to ongoing discharges of benzene that exceeded new health-based benchmarks for benzene. This order requires INEOS to undertake actions to address benzene including developing a plan to address benzene discharges from wastewater, implementing procedures to notify members of the public affected by discharges exceeding the new benchmarks, and investigating all sources of benzene discharges and developing a plan to prevent, decrease and eliminate those discharges.
- (h) On April 20, 2024, INEOS voluntarily shut down some of its operations to conduct maintenance and address equipment issues. I understand that INEOS is undertaking actions to address some of the sources of benzene discharges during this time.
- (i) On April 25, 2024, the AP1 monitoring station measured elevated benzene concentrations of  $191.3 \mu\text{g}/\text{m}^3$  at 1:00pm and  $131.7 \mu\text{g}/\text{m}^3$  at 5:00pm, exceeding the  $90 \mu\text{g}/\text{m}^3$  for 1-hour benchmark. AFN declared a local state of emergency as a result of the high levels of benzene experienced in their community.
- (j) On May 1, 2024, a Director's Order was issued confirming the April 18, 2024 provincial officer's order.
- (k) On May 1, 2024, the Air ECA was amended to include new conditions to prevent or reduce the discharge of benzene from the Styrene I and Styrene II sites while INEOS' operations related to the manufacture and production of styrene and ethylbenzene are suspended, and to impose requirements to address the discharge of benzene prior to resuming normal operations.

For the reasons set out above, and taking into account the purposes of the EPA and the public interest, I believe it is necessary in the circumstances to suspend condition 1.1. of the Air ECA.

**This Notice shall constitute part of the approval issued under Approval No. 8903-AD5HPV dated December 15, 2016**

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the Notice requiring the hearing shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be available with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar\*  
Ontario Land Tribunal  
655 Bay Street, Suite 1500  
Toronto, Ontario  
M5G 1E5  
OLT.Registrar@ontario.ca

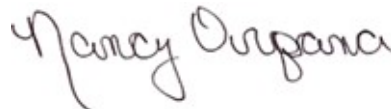
and

The Director appointed for the purposes of Part II.1  
of the *Environmental Protection Act*  
Ministry of the Environment, Conservation and  
Parks  
135 St. Clair Avenue West, 1st Floor  
Toronto, Ontario  
M4V 1P5

\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

DATED AT TORONTO this 1st day of May, 2024



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Nancy E Orpana, P.Eng.

Director

appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

SM/

c: District Manager, MECP Sarnia  
N/A, INEOS Styrolution Canada Ltd.