



**The Regional  
Municipality of  
Durham**

Works Department

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March 31, 2021

Clerk's Department  
Municipality of Clarington  
40 Temperance Street  
Bowmanville, Ontario L1C 3A6

Attention: June Gallagher, Municipal Clerk

**RE: Durham York Energy Centre Operations – Long-Term  
Sampling System (AMESA) Update**

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In March 2021, Durham Region Works Committee considered Report #2021-WR-5 which provided an update and additional details on the operations and reporting of the Long-Term Sampling System (LTSS) at the Durham York Energy Centre (DYEC). Staff were directed to provide this Report to Municipality of Clarington (Clarington) Council.

The Report (Attachment #1) outlined the 2018 Adsorption Method for Sampling Dioxins and Furans (AMESA) Work Plan implementation and an overview of the monthly data collected during the 2020 calendar year. Works Committee Report #2021-WR-5 was reviewed and subsequently approved by Regional Council.

As noted in the Report, the DYEC is required to operate a LTSS to monitor Dioxins and Furans in accordance with Environmental Compliance Approval (ECA) section 7(3):

**Long-Term Sampling for Dioxins and Furans**

**(3) (a) The Owner shall develop, install, maintain and update as necessary a long-term sampling system, with a minimum monthly sampling frequency, to measure the concentration of Dioxins and Furans in the Undiluted Gases leaving the Air Pollution Control (APC) Equipment associated with each Boiler. The performance of this sampling system will be evaluated during the annual Source Testing programs in accordance with the principles outlined by 40 CFR 60, Appendix B, Specification 4.**

**(b) The Owner shall evaluate the performance of the long-term sampling system in determining Dioxins and Furans emission trends**

**and/or fluctuations as well as demonstrating the ongoing performance of the APC Equipment associated with the Boilers**

Durham and York Regions (Owners) developed the AMESA Work Plan in consultation with the Ministry of the Environment, Conservation and Parks (MECP) and Covanta, HDR emissions specialist, the AMESA manufacturer, Environment S.A. Deutschland (ESAD), and the North America vendor Envea (previously Altech).

The AMESA continuously samples flue gas from the Air Pollution Control (APC) system to evaluate the equipment's performance over a 28-day period. During 2020, the AMESA system operated normally in accordance with the Work Plan to collect data for performance evaluation of the system. Additionally, data was collected during short-term sampling periods coinciding with the Source Testing Program.

Measurements obtained from the AMESA system are not used for verifying compliance with the approval limit for Dioxins and Furans. As noted in ECA section 7(3)(b) above, the LTSS is used in determining Dioxins and Furans emission trends, as well as demonstrating the ongoing performance of the APC equipment.

As identified within the [2020 Annual Report](#), the Owners received monthly updates on the AMESA performance and results during 2020. The conclusions drawn from the data determined that the AMESA system produced sufficient quality data that would be suitable for monitoring the overall performance of the APC system, including establishing trends for Dioxins and Furans long-term analysis as envisioned by the ECA condition. In consultation with the MECP, the AMESA LTSS will continue as part of a comprehensive monitoring system at the DYEC.

Durham Region staff have registered to delegate at the April 6, 2021, Planning and Development Committee meeting to provide additional information and respond to any questions.

Sincerely,



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Susan Siopis, P.Eng.  
Commissioner, Works

c. G. Anello, M.Eng., P.Eng., PMP, Director, Waste Management Services, Durham Region

Enclosed (Attachment #1)

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



# The Regional Municipality of Durham Report

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To: Works Committee  
From: Commissioner of Works  
Report: #2021-WR-5  
Date: March 3, 2021

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**Subject:**

Durham York Energy Centre Operations – Long-Term Sampling System Update

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**Recommendation:**

That the Works Committee recommends to Regional Council:

That this report be received for information.

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**Report:**

**1. Purpose**

- 1.1 This information report provides an update and additional details with respect to the operations and reporting of the Long-Term Sampling System at the Durham York Energy Centre (DYEC).

**2. Background**

- 2.1 The DYEC as part of the Environmental Compliance Approval (the ECA) section 7(3), is required to operate a Long-Term Sampling System (LTSS) for the monitoring for dioxins and furans.
- 2.2 The Adsorption Method for Sampling Dioxins and Furans (AMESA) LTSS is installed on each of the two boiler units at the DYEC and is a dioxin and furan continuous sampling system designed to meet the requirements of the ECA. The operation of the AMESA was initiated in 2015 and has been maintained in

accordance with current guidance from the AMESA manufacturer, Environment S.A. Deutschland (ESAD, the European manufacturer of the AMESA system), the North American vendor ENVEA and the AMESA Technical Manual (June 2010).

- 2.3 The AMESA system is used only for the purpose stated in ECA Condition 7(3) as included below, which relates to Dioxins and Furans emissions trend analysis and evaluation of Air Pollution Control equipment performance.

ECA Condition 7. (3). Testing, Monitoring and Auditing Long-Term Sampling for Dioxins and Furans:

- (3) (a) The Owner shall develop, install, maintain and update as necessary a long-term sampling system, with a minimum monthly sampling frequency, to measure the concentration of Dioxins and Furans in the Undiluted Gases leaving the (Air Pollution Control) APC Equipment associated with each Boiler. The performance of this sampling system will be evaluated during the annual Source Testing programs in accordance with the principles outlined by 40 CFR 60, Appendix B, Specification 4.
- (b) The Owner shall evaluate the performance of the long-term sampling system in determining Dioxins and Furans emission trends and/or fluctuations as well as demonstrating the ongoing performance of the APC Equipment associated with the Boilers.

- 2.4 The AMESA results themselves do not constitute a compliance point for the facility operations.
- 2.5 Following the 2016 facility Abatement plan, several workplans for continued AMESA system improvements have been completed at the facility. These workplans identified data concerns with the accuracy of the monthly evaluation data. Prior to the implementation of the 2018 strategy, inconsistent monthly AMESA data prevented the determination of dioxins and furans trends and presented challenges in achieving correlation between Method 23 sampling, which reviews samples collected from stationary monitoring locations, and the AMESA system results.
- 2.6 As such the objective of the 2018 AMESA Work Plan was to set forth an outline of a revised strategy to improve the consistency of monthly data while continuing

the performance evaluation of the LTSS. The 2018 AMESA Work Plan was provided to the Ministry of the Environment, Conservation and Parks (MECP) in November 2018 with activities identified within the workplan continuing until late 2020. Activities within the 2018 Work Plan included review and improvements to both plant equipment and laboratory processes and procedures in an effort to identify and resolve the cause of the inconsistencies.

### **3. Continued System Operations and Reporting**

- 3.1 With the completion of the 2018 program a greater level of consistency regarding monthly AMESA results was achieved, as well as improved correlation between the AMESA results and the Method 23 results obtained during the voluntary and compliance source testing programs at the DYEC.
- 3.2 The 2018 program actions and recent dataset along with corresponding actions for program continuation were reviewed with the MECP. This has resulted in key outcomes for the continuation of the program as follows:
- a. The Long-Term Sampling for dioxins and furans will continue to be operated at the DYEC with the continuation of AMESA Program and Record Retention.
  - b. LTSS data validation will continue in conformance with the AMESA investigation checklist.
  - c. Validated LTSS data shall be utilized to evaluate trends in the performance of the facility's APC Equipment.
  - d. Annual AMESA correlation tests will be discontinued following the November 2020 Source Test. Correlation testing will be re-implemented if the AMESA results exhibit an erratic trend.
  - e. All AMESA records required by ECA conditions 14(3) through 14(8) will be held at the Facility and will be available for MECP inspection. Monthly data shall be summarized and presented in the annual ECA report.
  - f. AMESA results for the previous year will be reported as part of the Annual Report as required by ECA Condition 15, commencing with data collected during the 2020 calendar year. AMESA trends of validated data will be presented as a 12-month rolling average together with analysis to demonstrate the ongoing performance of the APC Equipment. A summary of non-routine maintenance completed on the AMESA system will be presented as part of the Annual Report.

- 3.3 The Annual Report as required by ECA Condition 15, which includes details on the AMESA results, is due to the MECP March 31 of each calendar year.

#### **4. Relationship to Strategic Plan**

- 4.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Goal 1: Environmental Sustainability

- 1.3 Protect, preserve and restore the natural environment, including greenspaces, waterways, parks, trails, and farmlands

b. Goal 5: Service Excellence

- 5.3 Demonstrate commitment to continuous quality improvement and communicating results

#### **5. Conclusion**

- 5.1 The Durham York Energy Centre continues to operate the Adsorption Method for Sampling Dioxins and Furans system in keeping with the requirements of ECA Condition 7. (3). regarding a Long-Term Sampling System.
- 5.2 Long-Term Sampling System data validation will continue in conformance with the Adsorption Method for Sampling Dioxins and Furans system investigation checklist. Validated Long-Term Sampling System data shall be utilized to evaluate trends in the performance of the facility's Air Pollution Control Equipment.
- 5.3 Annual Adsorption Method for Sampling Dioxins and Furans system correlation tests will be discontinued following the November 2020 Source Test. Correlation testing will be re-implemented if the Adsorption Method for Sampling Dioxins and Furans system results exhibit an erratic trend.
- 5.4 Annual Adsorption Method for Sampling Dioxins and Furans system results for the previous year will be reported as part of the Annual Report as required by Environmental Compliance Approval Condition 15, commencing with data collected during the 2020 calendar year.
- 5.5 For additional information, please contact Gioseph Anello, Director, Waste Management Services, at 905-668-7711, extension 3445.

Respectfully submitted,

**Original signed by:**

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Susan Siopis, P.Eng.  
Commissioner of Works

Recommended for Presentation to Committee

**Original signed by:**

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Elaine C. Baxter-Trahair  
Chief Administrative Officer