Stantec Consulting Ltd.
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June 4, 2018
File: 160950528

Attention: Mr. Gioseph Anello, Manager, Waste Planning, and Technical Services
The Regional Municipality of Durham
605 Rossland Road East
P.O. Box 623
Whitby, ON L1N 6A3

Dear Mr. Anello,

Reference: Durham York Energy Centre, Ambient Monitoring Program, Notification of Exceedance of Total Suspended Particulate (TSP)

The purpose of this letter is to provide a Notification of Exceedance to the Regions of Durham and York, the District Manager of the Ministry of the Environment and Climate Change (MOECC), and the Region of Durham Medical Officer of Health (MOH) of a measured Total Suspended Particulate (TSP) exceedance for the Durham York Energy Center (DYEC) monitoring network. This notification is being provided as per Section 9 of the Ambient Monitoring Plan (AMP) (Stantec, 2012).

The May 2, 2018 TSP measurement at the Rundle Road Station was 204 µg/m^3, exceeding the 24-hour Ontario Ambient Air Monitoring Criteria (AAQC) of 120 µg/m^3 by 70%. The exceedance was identified on May 28, 2018 during Stantec's review of the month's non-continuous monitoring data as per MOECC protocols.

Following the requirements of the AMP, Stantec examined the filter media and data sampling records for this measurement and conducted a root cause assessment of the exceedance. Furthermore, the potential impact on human health was evaluated by a Stantec Toxicologist.

Our review indicates the following:

1. Stantec did not identify any equipment malfunctions or issues with the non-continuous monitor. The laboratory did not identify any error in the TSP laboratory analysis. Re-analysis of the filter media for TSP is not feasible, since part of the filter media was used for laboratory analyses of metals in the TSP.
2. Photographs taken on May 1, 2018 (one day before the sample collection day) show heavy truck traffic along Rundle Road. Earth moving activities were also noted in the area on May 1 by field staff. The filter media had visibly heavier loading compared with the samples collected on the same day at the Courtice Water Pollution Control Plant (WPCP) and Fenceline Stations. A photograph of the truck traffic on May 1 and their proximity to the Rundle Road Station is shown in Figure 1.

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3. Over the course of May 2, 2018, the wind directionality varied from blowing from west-southwesterly to north-easterly directions with an average wind direction of westerly. The DYEC is not upwind of the Rundle Road Station for these wind directions.
4. The 24-hour average TSP measurements at the Courtice WPCP (upwind of the DYEC) and Fenceline Stations on May 2, 2018 were 84 $\mu g/m^3$ and 88 $\mu g/m^3$, respectively, both below the 24-hour TSP AAQC. The measurements at these stations however, suggest that TSP levels in the area around the DYEC were elevated.
5. A review of the DYEC Continuous Emissions Monitoring (CEMs) data for May 2 showed the measured opacity for both boilers to be 0% all day.
6. No Air Quality Alerts were issued by the MOECC on May 2, 2018.
7. The potential human health risks associated with TSP are related to the concentrations of the inhalable TSP fraction ($PM_{2.5}$). On May 2, 2018, the measured daily average $PM_{2.5}$ concentration at the Rundle Road Station was 12.6 $\mu g/m^3$. This is below the 24-hour human health-based ambient air quality criterion of 30 $\mu g/m^3$. Therefore, $PM_{2.5}$ concentrations measured on May 2, 2018, represented a negligible human health risk. The exceedance of the TSP criterion therefore, also represented a negligible human health risk.

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Figure 1: Truck Traffic Along Unpaved Access Road Adjacent to the Rundle Road Station on May 1, 2018

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Based on Stantec's review, the likely cause of the TSP exceedance was generally elevated TSP levels in the area along with heavy truck traffic and earth moving activities near the Rundle Road Station. The measured TSP concentration is not expected to have resulted in an adverse effect on human health or the environment.

If you have any comments or questions, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

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