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April 24, 2015  
File: 160950528

**Attention: Mr. Greg Borchuk, P.Eng.**  
**Project Manager, EFW**  
**Waste Management Services**

The Region of Durham  
605 Rossland Rd.,  
Whitby, ON L1N 6A3

Dear Mr. Borchuk,

**Reference: Q4 2014 Ambient Air Quality Monitoring Report for the Durham York Energy Centre – Crago Road Station**

Please find attached with this letter the Q4 2014 quarterly report for the Durham York Energy Centre (DYEC) Crago Road Station.

The Crago Road ambient monitoring station shelter and instrumentation was installed by Stantec Consulting Limited and our instrumentation sub-consultant Valley Environmental Services Inc. (Valley Environmental) during October to November 15, 2014. This quarterly report provides a summary of the measurements collected at this station during November 15 – December 31, 2014 (which falls within calendar Quarter 4 of 2014). All equipment operated well during this initial measurement period with the exception of the continuous PM<sub>2.5</sub> monitor.

A significant operational issue was encountered with the Thermo Sharpe 5030 PM<sub>2.5</sub> monitor that resulted in a data recovery rate of about 25% during the November-December period. The monitor had to be removed and shipped back to the supplier for repair and replacement of the main board under warranty. After noting error messages on the unit, Valley Environmental removed the unit on December 3, 2014 and conducted tests on the unit at their facility. It was determined that the unit required manufacturer repairs and was delivered to the local representative of the instrument manufacturer, CD NOVA-Tech Inc. (CD NOVA) on December 11, 2014. CD NOVA went through a number of diagnostic tests/repairs on the unit in the period December 11, 2014 to January 20, 2015. CD NOVA returned the unit to Valley Environmental on January 20, 2015 and it was re-installed at the station on January 23, 2015. The unit has been operating normally since it was re-installed. Valley Environmental contacted the Thermo-Fisher offices in both Toronto and Edmonton and requested a replacement unit be provided for use on site during the repair period, however neither of the offices had a spare unit available.



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The root cause of the issue with the new instrument supplied by the manufacturer to Valley/Stantec was a defective mother board, as well as there being a design/manufacturing inconsistency with the mother board. Since these were manufacturer issues, the unit was repaired by the manufacturer under warranty, and no further remedial action should be required. Additional details on this instrumentation issue are presented in Section 3.2 of the report and a letter from the CD NOVA detailing their repairs/schedule is included in Appendix F.

Regional Council has requested that 98<sup>th</sup> percentile PM<sub>2.5</sub> data also be provided along with the quarterly reports, which is provided in Table 1 below. A comparison to the Canadian Ambient Air Quality Standards (CAAQS) for PM<sub>2.5</sub> requires averaging the 98<sup>th</sup> percentile daily average levels in each of three consecutive years. The value presented in Table 1 corresponds to the 98<sup>th</sup> percentile over the 2 month monitoring period (with less than one month of data actually collected for this quarter). Two years and 10-months of additional data will be required in order to provide an explicit comparison to the current CAAQS criteria of 28 µg/m<sup>3</sup>.

**Table 1 Summary of the 98<sup>th</sup> Percentile Daily Average PM<sub>2.5</sub> Concentrations Measured to Date (µg/m<sup>3</sup>)**

| Period                        | Crago Road Monitoring Station |
|-------------------------------|-------------------------------|
| November 2014 - December 2014 | 9.1                           |

Regards,

**STANTEC CONSULTING LTD.**

**Original Signed by G. Crooks**

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