Quarterly Ambient Air Quality Monitoring Report for the Durham York Energy Centre –January to March 2016

Durham York Energy Centre

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Sign-off Sheet

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Executive Summary

The Regional Municipalities of Durham and York are constructing the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage municipal solid waste remaining after diversion from the Regions. The facility commenced commercial operation on February 1, 2016.

The Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, 2012), was developed based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three year period. An ambient air quality monitoring and reporting program was also a requirement laid out in the Provincial Minister's Notice of Approval to Proceed with the Undertaking, detailed in Condition 11 of the Notice of Approval (MOECC, 2010). The air monitoring plan was also developed to satisfy the conditions of the Environmental Compliance Approval and the environmental mitigation and commitments set out in the Environmental Assessment (Jacques Whitford, 2009). The predominantly downwind station is located along Rundle Road, south of Baseline Road. The predominantly upwind station is sited at the Courtice Water Pollution Control Plant (WPCP). Since May 2013, measurements of the following air contaminants have been made at the two stations:

- Sulphur Dioxide (SO_2);
- Nitrogen Oxides (NO_X);
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$);
- Metals in total suspended particulate matter (TSP);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans.

Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). At the request of the Region of Durham, dioxin/furan sampling was resumed from October 21, 2015 to January 25, 2016, however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational on February 1, 2016, and monitoring of non-continuous air quality parameters resumed. The first sampling day for non-continuous monitors was February 6, 2016.

Meteorological data is also measured at the two stations. The predominantly downwind Rundle Road station measures horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall. The predominantly upwind Courtice WPCP Station measures atmospheric temperature, relative humidity, rainfall and barometric pressure. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period January to March (Calendar Quarter 1). During this quarter, a few minor instrumentation issues were encountered with above acceptable data recovery rates for all measured air quality parameters. Additional details on instrumentation issues are presented in **Section 3.2** of this report.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO_2, SO_2 and $PM_{2.5}$ were below the applicable O. Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in **Table 2-2** of this report;

2. Since the Canadian Ambient Air Quality Standard (CAAQS) for $PM_{2.5}$ is based on a 98th percentile level over 3 years, whereas the $PM_{2.5}$ measurement period at both stations for this quarterly report was three months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore no comparison of the measured $PM_{2.5}$ data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative;

3. The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable criteria (as presented in **Table 2-3** in this report);

4. The maximum measured concentrations of all PAHs with MOECC air quality criteria were well below their applicable criteria shown in **Table 2-4**, with the exception of the 24-hour benzo(a)pyrene concentration in one sample measured at the Courtice WPCP Station and one sample measured at the Rundle Road Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 17% and 315%, respectively. The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this recently enacted AAQC are commonly measured throughout Ontario. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419 24-hour average guideline, and the HHRA health based standard;

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criteria presented in **Table 2-4**.

6. In summary, the measured concentrations of those air contaminants monitored were below their applicable MOECC criteria during the monitoring period between January and March 2016, with the exception of benzo(a)pyrene. All measured levels of the monitored contaminants were below their applicable HHRA health-based standards

Abbreviations

AAQC	Ambient Air Quality Criteria
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminants
D/Fs	Dioxins and Furans
DYEC	Durham York Energy Centre
EFW	Energy from Waste
MOECC	Ontario Ministry of the Environment and Climate Change
SO_2	Sulphur Dioxide
NO_X	Nitrogen Oxides
PAH	Polycyclic aromatic hydrocarbons
Particulate	A particle of a solid or liquid that is suspended in air.
PCB	Polychlorinated biphenyl
PCDD/PCDF	Polychlorinated dibenzo-p-dioxins and dibenzofurans
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter smaller than 2.5 microns
TEQ	Toxic equivalent quotient
TEQs	Toxic Equivalents
TSP	Total Suspended Particulate
WPCP	Water Pollution Control Plant
Elements	
Cd	Cadmium
Hg	Mercury
Pb	Lead
Al	Aluminum
As	Arsenic
Be	Beryllium
Cr	Chromium
Cu	Copper
Mn	Manganese
Ni	Nickel
Ag	Silver

Tl	Thallium
Sn	Tin
V	Vanadium
Zn	Zinc
Miscellaneous	
°C	temperature in degrees Celsius
N/A	not available
%	percent
ppm	part per million
ppb	part per billion
ppt	part per trillion
min	minimum
max	maximum
µg/m^3	microgram per cubic metre

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

The Regional Municipalities of Durham and York constructed the Durham York Energy Centre (DYEC) which is an Energy-from-Waste (EFW) Facility intended to provide a long-term, sustainable solution to manage municipal solid waste remaining after diversion from the Regions. The site location of the DYEC is shown in **Figure 1-1**. The facility commenced commercial operation on February 1, 2016.

A monitoring plan, Ambient Air Quality Monitoring Plan - Durham York Residual Waste Study (Stantec, 2012), was developed based on the Regional Council's mandate to provide ambient air quality monitoring in the area of the DYEC for a three year period.

The purposes of the ambient air quality monitoring program are to:

1. Quantify any measureable ground level concentrations resulting from emissions from the DYEC cumulative to local air quality, including validating the predicted concentrations from the dispersion modelling conducted in the Environmental Assessment (Jacques Whitford, 2009);
2. Monitor concentration levels of EFW-related air contaminants in nearby residential areas; and,
3. Quantify background ambient levels of air contaminants in the area.

Two monitoring stations in the vicinity of the DYEC were set up in April 2013. Since May 2013, the two stations have measured the following air contaminants:

- Sulphur Dioxide (SO_2);
- Nitrogen Oxides (NO_X);
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$);
- Metals in Total Suspended Particulate matter (TSP);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans.

This quarterly report provides a summary of the ambient air quality data collected at these two stations for the period January to March 2016.

Operation of the non-continuous monitors was temporarily discontinued from June 28, 2014 (after completion of the background air quality data collection period) onwards through the rest of construction and commissioning, as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012). At the request of the Region of Durham, dioxin/furan sampling was resumed from October 21, 2015 to January 25, 2016, however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). The EFW facility became fully operational starting February 1, 2016, and non-continuous monitoring resumed (as specified in the Ambient Monitoring Plan). The first sampling day for the non-continuous monitors was February 6, 2016.

1.2 LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS

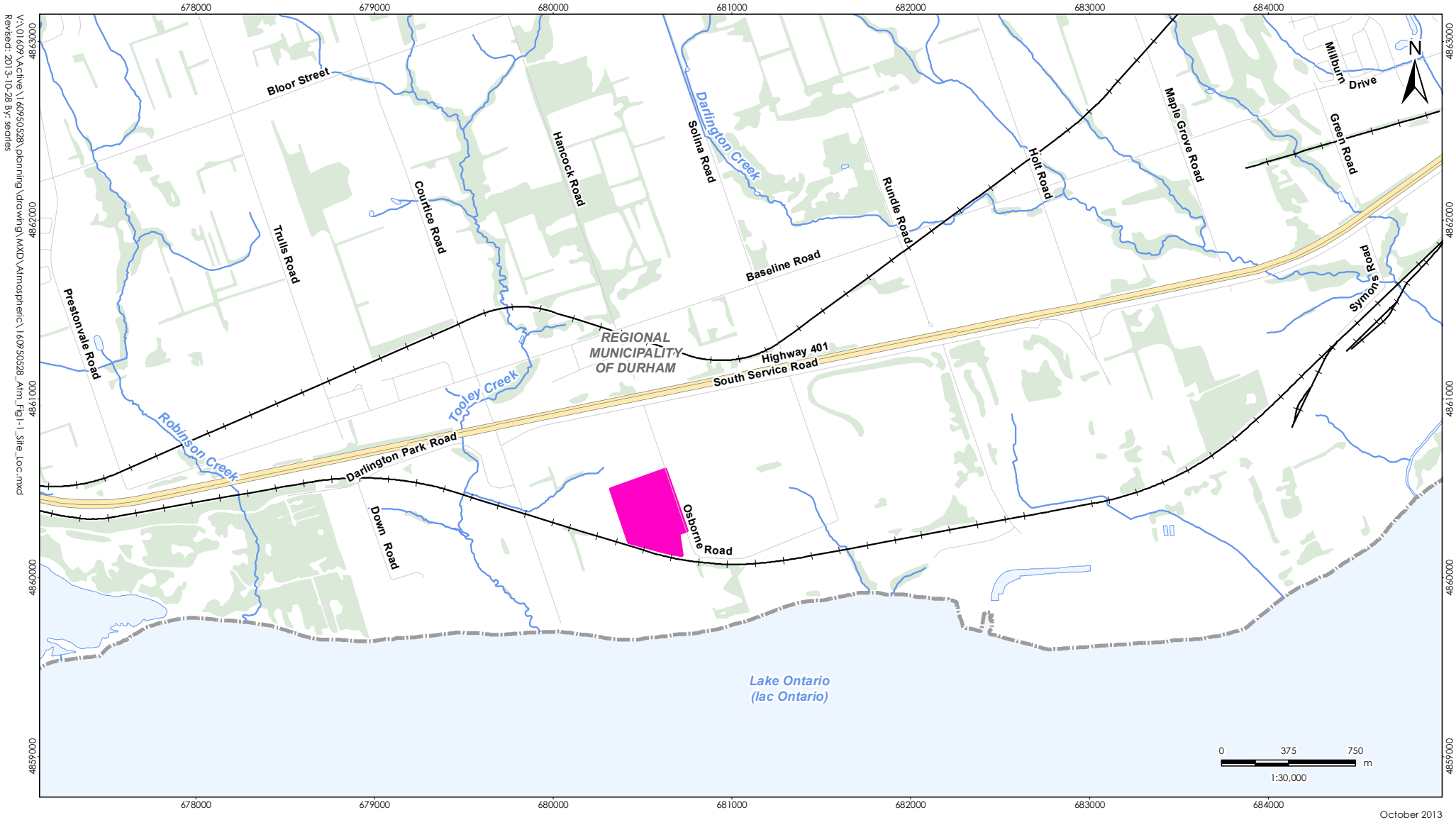
The selection of sites for the monitoring stations was done in consultation with the Ontario Ministry of Environment and Climate Change (MOECC) and Durham/York representatives based on the results of air quality modelling done in support of the environmental assessment for the project, the locations of nearby sensitive receptors, and general MOECC siting criteria. Two monitoring stations (one predominantly downwind and one predominantly upwind) were chosen for the ambient air quality program. The final locations of the monitoring stations were influenced by the availability of electrical power, accessibility of each location, and security. Details of the siting requirements are detailed in the Monitoring Plan.

The selected downwind location is sited northeast of the DYEC in the vicinity of residential receptors predominantly downwind of the DYEC in this direction, and falls in the area where maximum annual concentrations are predicted to occur. The predominantly downwind Rundle Road Station, is located along Rundle Road, south of Baseline Road. Its location is shown in **Figure 1-2**. The monitoring station measures all the air contaminants listed in **Section 1.1** and meteorological data. This station is referred to as the Rundle Road Station.

The predominately upwind Courtice WPCP Station, is sited at the Courtice Water Pollution Control Plant (WPCP), located to the southwest of the DYEC in order to measure background air quality in the predominantly upwind direction. The location is presented in **Figure 1-2**. This monitoring station measures the air contaminants presented in **Section 1.1**, as well as meteorological data, with the exception of wind speed and wind direction, which are measured and provided by the Courtice Water Pollution Control Plant.

A third Fence Line Station, which measures non-continuous parameters (metals and total particulate matter), was installed prior to full operation of the DYEC. As per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012), the Fence Line station, which collects non-continuous parameters began operation after the Facility's commissioning period was completed, and will run for a one year period. The location is presented in **Figure 1-2**.

Photographs of the Rundle Road, Courtice WPCP, and Fence Line ambient air quality monitoring stations are shown in **Figure 1-3** to **Figure 1-45**, respectively.



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Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Legend

- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area

Client/Project

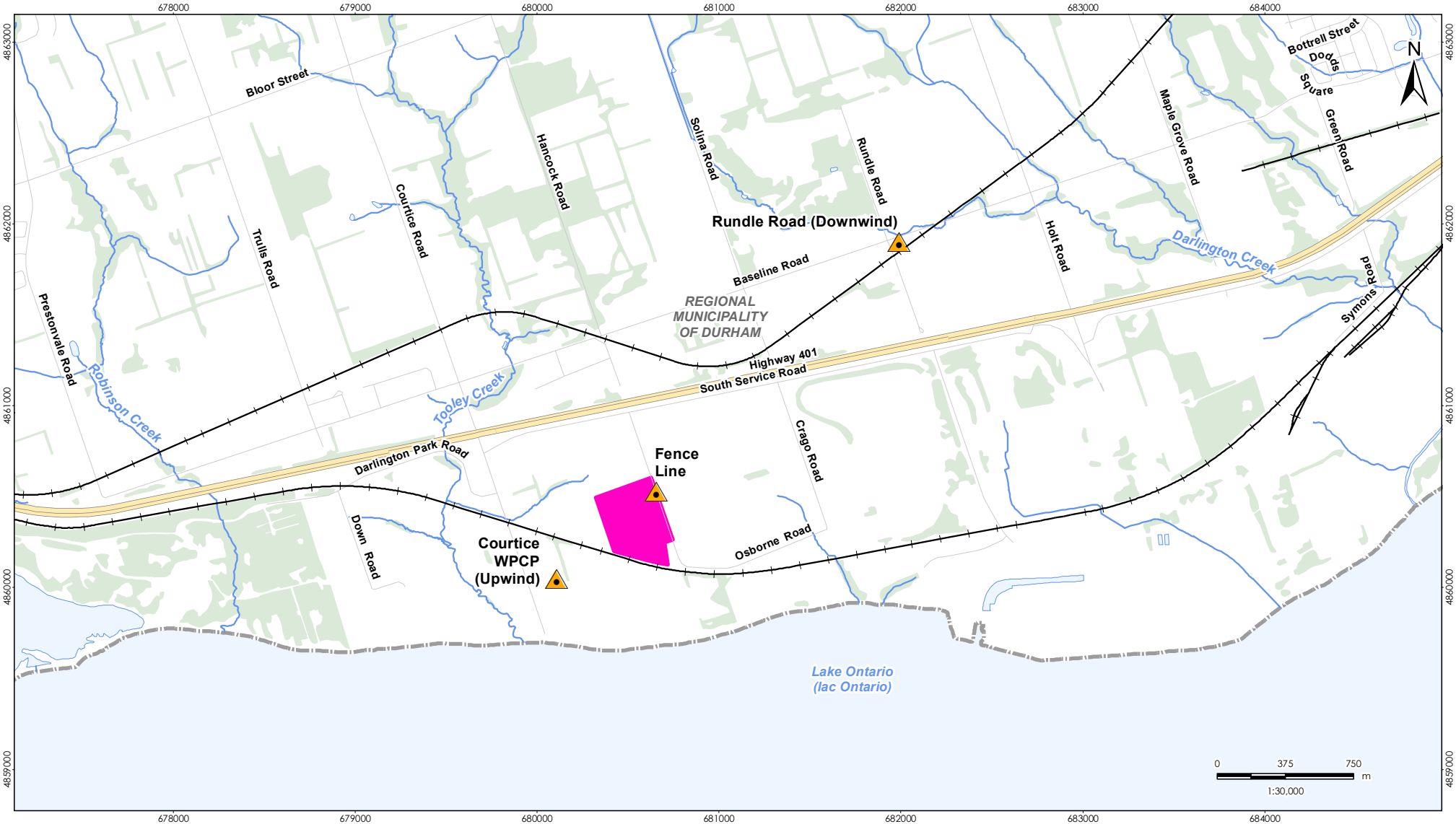
The Region of Durham
Durham York Energy Centre

Figure No.

1-1

Title

Site Location Plan



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Legend

- Station Location
- Durham York Energy Centre Site
- Railway
- Road
- Highway
- Watercourse
- Waterbody
- Wooded Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

Client/Project

The Region of Durham
Durham York Energy Centre

Figure No.

1-2

Title

Locations of Ambient Monitoring Stations

Figure 1-3 View of Rundle Road Ambient Air Quality Monitoring Station

Figure 1-4 View of Courtice WPCP Ambient Air Quality Monitoring Station

Figure 1-5 View of Fence Line Ambient Air Quality Monitoring Station

2.0 KEY COMPONENTS ASSESSED

2.1 METEOROLOGY

The following meteorological parameters are measured at the Rundle Road and Courtice WPCP monitoring stations.

Table 2-1 Summary of Meteorological Parameters Measured at Each Station

Courtice WPCP (Predominately Upwind) Ambient Air Quality Monitoring Station	Rundle Road (Predominately Downwind) Ambient Air Quality Monitoring Station
Wind Speed and Direction @ 20-m	Wind Speed and Direction @10-m
Ambient Temperature @ 2-m	Ambient Temperature @ 2-m
Relative Humidity	Relative Humidity
Rainfall	Rainfall
Barometric Pressure	

2.2 AIR QUALITY CONTAMINANTS OF CONCERN

The ambient air quality monitoring program for the DYEC includes the following contaminants specified in the Ambient Air Quality Monitoring Plan:

- Nitrogen Oxides (NO_X);
- Sulphur Dioxide (SO_2);
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$);
- Total Suspended Particulate (TSP) matter and metals;
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Dioxins and Furans (D/Fs).

Operation of the non-continuous monitors was temporarily discontinued between June 28, 2014 and January 31, 2016 as per Section 1.2 of the Ambient Monitoring Plan (Stantec, 2012).

At the request of the Region of Durham, dioxin/furan sampling was resumed from October 21, 2015 to January 25, 2016, however this additional sampling was outside the scope of the Ambient Monitoring Plan (Stantec, 2012). Results of the January 2015 dioxin/furan sampling are included in this report.

QUARTERLY AMBIENT AIR QUALITY MONITORING REPORT FOR THE DURHAM YORK ENERGY CENTRE –JANUARY TO MARCH 2016

Key Components Assessed
May 13, 2016

The EFW facility started full commercial operation on February 1, 2016, and monitoring of non-continuous monitors resumed, as specified in the Ambient Monitoring Plan. The following contaminants were measured this quarter starting on February 6, 2016:

- Total Suspended Particulate (TSP) matter and metals,
- Polycyclic Aromatic Hydrocarbons (PAHs), and,
- Dioxins and Furans (D/Fs).

The following are lists of the specific metals, PAHs, and dioxins and furans being measured. Rationales for the choice of contaminants being monitored are provided in the Ambient Air Quality Monitoring Plan.

Metals:

- Aluminum (Al)
- Antimony (Sb)
- Arsenic (As)
- Barium (Ba)
- Beryllium (Be)
- Bismuth (Bi)
- Boron (B)
- Cadmium (Cd)
- Cobalt (Co)
- Copper (Cu)
- Chromium (Cr) (Total)
- Iron (Fe)
- Lead (Pb)
- Magnesium (Mg)
- Manganese (Mn)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Phosphorus (Ph)
- Selenium (Se)
- Silver (Ag)
- Strontium (Sr)
- Thallium (Tl)
- Tin (Sn)
- Titanium (Ti)
- Uranium (U)
- Vanadium (V)
- Zinc (Zn)
- Zirconium (Zr)

Polycyclic Aromatic Hydrocarbons:

- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)fluorene
- Benzo(a)pyrene
- Benzo(b)fluorene
- Benzo(b)fluoranthene
- Benzo(e)pyrene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Biphenol
- Chrysene
- Dibenz(a,h)anthracene
- Dibenz(a,c)anthracene
- Fluoranthene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Perylene
- Phenanthrene
- Pyrene
- Tetralin
- o-Terphenyl
- Total PAHs

Dioxins and furans:

- 2,3,7,8-Tetra CDD
- 1,2,3,7,8-Penta CDD
- 1,2,3,4,7,8-Hexa CDD
- 1,2,3,6,7,8-Hexa CDD
- 1,2,3,7,8,9-Hexa CDD
- 1,2,3,4,6,7,8-Hepta CDD
- Octa CDD
- Total Tetra CDD
- Total Penta CDD
- Total Hexa CDD
- Total Hepta CDD
- 2,3,7,8-Tetra CDF
- 1,2,3,7,8-Penta CDF
- 2,3,4,7,8-Penta CDF
- 1,2,3,4,7,8-Hexa CDF
- 1,2,3,6,7,8-Hexa CDF
- 2,3,4,6,7,8-Hexa CDF
- 1,2,3,7,8,9-Hexa CDF
- 1,2,3,4,6,7,8-Hepta CDF
- 1,2,3,4,7,8,9-Hepta CDF
- Octa CDF
- Total Tetra CDF
- Total Penta CDF
- Total Hexa CDF
- Total Hepta CDF
- Total toxic equivalency (I-TEQ)

2.3 AIR QUALITY CRITERIA

Two sets of standards were used for comparison to the air quality data as specified in the Ambient Air Monitoring Plan. The first set of standards is the limits reported in O.Reg.419/05 (Schedules 3 and 6). These are compliance based standards used throughout the province of Ontario. However, not all chemicals have O.Reg.419/05 criteria, or in some instances updated health-based standards were used in the human health risk assessment (HHRA) conducted in support of the Environmental Assessment (July 31, 2009 - December 10, 2009). These health-based values, which were reported in Table 7-2 (Summary of Inhalation TRVs and Inhalation Benchmarks Selected for CACs) and Table 7-3 (Inhalation TRVs and Inhalation Benchmarks for Selected COPCs) of the HHRA (Stantec, 2009) were used as the second set of standards.

The previously applicable 24-hour Canada-Wide Standard (CWS) for $PM_{2.5}$ of 30 µg/m^3 (98th percentile averaged over 3 consecutive years) has been superseded by the new Canadian Ambient Air Quality Standard (CAAQS) of 28 µg/m^3 (98th percentile averaged over 3 consecutive years) and the annual objective of 1028 µg/m^3 as noted in **Table 2-2**. The proposed CAAQS 24-hour objective for 2020 is 27 µg/m^3.

A summary of the relevant air quality criteria for the contaminants monitored in Q1 2016 is presented in **Table 2-2**.

Table 2-2 Summary of Air Quality Criteria for CACs

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Sulphur dioxide	7446095	690	275		690	275	29
Nitrogen oxides [A]	10102-44-0	400	200		400	200	60
Contaminant	**CAS**	**Canadian Ambient Air Quality Standards (CAAQS)**			**HHRA Health-Based Standards**		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)
$PM_{2.5}$	N/A		28 [B]	10 [C]		30 [D]	

Notes:

A. The Schedule 3 standards for NO_X are based on health effects of NO_2, as NO_2 has adverse health effects at much lower concentrations than NO. Therefore the standard was compared to NO_2 in this report. However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the standard was also compared to the monitored NO_X.

B. Canadian Ambient Air Quality Standard for Respirable Particulate Matter, effective by 2015. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.

C. Annual Canadian Ambient Air Quality Standard for Respirable Particulate Matter, effective by 2015. The Respirable Particulate Matter Objective is referenced to the 3-year average of the annual average concentrations.

D. HHRA Health-Based Standard for $PM_{2.5}$ was selected referencing CCME (2006).

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Total Particulate	NA		120			120	60
Aluminum	7429-90-5		4.8				
Antimony	7440-36-0		25		5	25	0.2
Arsenic	7440-38-2		0.3		0.2	0.3	0.015 [A] 0.0043 [B]
Barium	7440-39-3		10		5	10	1
Beryllium	7440-41-7		0.01		0.02	0.01	0.007 [A] 0.0024 [B]
Bismuth	7440-69-9	-					
Boron	7440-42-8		120		50		5
Cadmium	7440-43-9		0.025	0.005; annual	0.1	0.025	0.005 [A] 0.0098 [B]

Table 2-3 Summary of Air Quality Criteria for Metals

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards		
		1-Hour (µg/m³)	24-Hour (µg/m³)	Other time Period (µg/m³)	1-Hour (µg/m³)	24-Hour (µg/m³)	Annual (µg/m³)
Chromium (Total)	7440-47-3		0.5		1		60
Cobalt	7440-48-4		0.1		0.2	0.1	0.1
Copper	8440-50-8		50				
Iron	15438-31-0		4				
Lead	7439-92-1		0.5	0.2; 30-day	1.5	0.5	0.5
Magnesium	7439-95-4	-					
Manganese	7439-96-5		0.4				
Mercury	7439-97-6		2		0.6	2	0.3
Molybdenum	7439-87-7		120				
Nickel	7440-02-0		0.2	0.04; annual	6		0.05
Phosphorus	7723-14-0						6.4×10^{7}
Selenium	7782-49-2		10		2	10	0.2
Silver	7440-22-4		1		0.1	1	0.01
Strontium	7440-24-6		120				
Thallium	7440-28-0				1		0.1
Tin	7440-31-5		10		20	10	2
Titanium	7440-32-6		120				
Vanadium	7440-62-2		2		0.5	1	1
Uranium	7440-61-1		1.5	0.03; annual			
Zinc	7440-66-6		120		50		5
Zirconium	7440-67-7		20				

Notes:

A. Annual Average

B. Carcinogenic Annual Average

Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards			
		1-Hour (ng/m^3)	24-Hour (ng/m^3)	Other time Period (ng/m^3)	1-Hour (ng/m^3)	24-Hour (ng/m^3)	Annual (ng/m^3)	Toxic Equivalency Factor Annual [A, G] $(ng/m^3)^{-1}$
1-Methylnaphthalene	90-12-0		12,000				3,000	
2-Methylnaphthalene	91-57-6		10,000				3,000	
Acenaphthene	83-32-9				1,000			1
Acenaphthylene	208-96-8		3,500		1,000			10
Anthracene	120-12-7		200		500		50	
Benzo(a)anthracene	56-55-3				500			100
Benzo(b)fluoranthene	205-99-2				500			100
Benzo(k)fluoranthene	207 -08-9				500			100
Benzo(a)fluorene	238-84-6				500		50	
Benzo(b)fluorene	243-17-4				500		50	
Benzo (g,h,i) perylene	191-24-2				500			100
Benzo(a)pyrene	50-32-8		0.05 [B] 5 [C] 1.1 [D]	0.01; annual		1	87 [A]	
Benzo(e)pyrene	192-97-2				500			10
Biphenyl	92-52-4						224,000	
Chrysene	218-01-9	-						-
Dibenzo(a,c)anthracene	215-58-7							100
Dibenzo(a,h)anthracene	53-70-3				500			1,000
Fluoranthene	206-44-0				500			1
Indeno(1,2,3-cd)pyrene	193-39-5				500			100
Naphthalene	91-20-3		22,500			22,500	3,000	
o-Terphenyl	84-15-1				50,000		5,000	
Perylene	198-55-0				500			1

Table 2-4 Summary of Air Quality Criteria for PAHs and D/Fs

Contaminant	CAS	O. Reg 419/05 – Schedule 3/AAQC			HHRA Health-Based Standards			
		1-Hour (ng/m^3)	24-Hour (ng/m^3)	Other time Period (ng/m^3)	1-Hour (ng/m^3)	24-Hour (ng/m^3)	Annual (ng/m^3)	Toxic Equivalency Factor Annual [A, G] $(ng/m^3)^{-1}$
Phenanthrene	85-01-8				500			1
Pyrene	129-00-0				500			1
Tetralin	119-64-2	-						-
Dioxins and Furans Total Toxic Equivalency [e]	NA		0.1 (pg TEQ/m^3) [F] 1 (pg TEQ/m^3) [C]					

Notes:

A. Carcinogenic Annual Average. Units in $(ng/m^3)^{-1}$.
B. Ontario Ambient Air Quality Criteria - The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.
C. O. Reg. 419 Schedule 6 Upper Risk Thresholds
D. O. Reg. 419 24 Hour Guideline
E. Application of the air standard for dioxins, furans, and dioxin-like PCBs requires the calculation of the total toxicity equivalent (TEQ) concentration contributed by all dioxin-like compounds in the mixture. TEQ is calculated using the methodology as per the O. Reg.419 Summary of Standards and Guidelines, and the corresponding WHO_{2005} toxic equivalency factors (TEFs).
F. Ontario Ambient Air Quality Criteria
G. Toxic Equivalency Factors (TEFs) are shown as benzo(a)pyrene equivalents.

3.0 INSTRUMENTATION SUMMARY

3.1 INSTRUMENTATION

The measurement program at the monitoring sites includes both continuous and non-continuous monitors to sample air contaminant concentrations. The monitors were set up in April 2013, and monitoring started in May 2013.

Monitoring for respirable particulate matter ($PM_{2.5}$), nitrogen oxides (NO_X) and sulphur dioxide (SO_2) are conducted on a continuous basis. A summary of the continuous monitors and a brief description of their principle of operation are provided in **Table 3-1** below.

Table 3-1 Summary of Continuous Ambient Air Quality Monitors

Contaminant	Monitor	Principle of Operation	Range	Time Interval
$PM_{2.5}$	Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor	Light Scattering Photometry / Beta Attenuation - Consists of a carbon14 source, detector and light scattering Nephelometer in a rack-mountable enclosure. The Thermo Sharp utilizes a continuous (non-step wise) hybrid mass measurement and a combination of beta attenuation and light scattering technology. The unit's filter tape is automatically advanced based upon a user defined frequency or particulate loading.	0-10 mg/m^3	1 minute
NO, NO_2, NO_X	API Model 200E Chemiluminescence Analyzer	Chemiluminescence - Uses a chemiluminescence detection principle and microprocessor technology for ambient continuous emissions monitoring (CEM). Measurements are automatically compensated for temperature and pressure changes.	0 – 1000 ppb	1 second
SO_2	Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100	Pulsed Florescence - SO_2 levels are measured based on the principle that SO_2 has a strong ultraviolet (UV) absorption at a wavelength between 200 and 240 nanometres (nm). The absorption of photons at these wavelengths results in the emission of fluorescence photons at a higher wavelength. The amount of fluorescence measured is directly proportional to the concentration of SO_2.	0 – 1000 ppb	1 second

Monitoring for metals in total suspended particulates (TSP), polycyclic aromatic hydrocarbons (PAHs) and dioxins and furans are conducted at both the Courtice WPCP (predominantly upwind) and Rundle Road (predominantly downwind) monitoring stations with non-continuous monitors, per the methodology and analyses described in the Ambient Air Monitoring Plan (Stantec, 2012) as presented in **Table 3-2**. Monitoring for metals in TSP is also conducted at the Fence Line Station.

As mentioned above, Stantec was requested to conduct additional dioxins/furans sampling on a 12-day schedule between October 21, 2015 and January 25, 2016. The methodology and analyses for the dioxins and furans sampling during this period follow those described in the Ambient Air Monitoring Plan (Stantec 2012) as presented in **Table 3-2**, with the exception of the sampling schedule (dioxin/furan sampling is on a 24-day schedule in the Ambient Monitoring Plan). The samples were submitted to Maxxam Analytics Inc., a Canadian Association for Laboratory Accreditation Inc. (CALA) / Standards Council of Canada (SCC) accredited laboratory, for analysis.

Table 3-2 Summary of Non-Continuous Ambient Air Quality Monitors

Contaminant	Sampler	Filter Media	Lab Analysis	Sampling Schedule
TSP and metals	Tisch Environmental TE-5170 mass-flow high volume sampler	Pre-weighed, conditioned Teflon coated glass fibre filters	Weighed for particulate loading and analysed using the Atomic Emission Spectroscopy / Inductively Coupled Plasma (AES/ICP) technique to determine metals content	24 hour sample taken every 6 days
PAHs	Tisch Environmental TE-1000 mass-flow high volume air sampler	Dual chambered sampling module with a Teflon-coated glass fibre filter and a Poly-Urethane Foam (PUF) cartridge	Gas Chromatography / Mass Spectrometry (GC/MS)	24 hour sample taken every 12 days
Dioxins / Furans				24 hour sample taken every 12 days (for January 2016 additional D/F sampling) 24 hour sample taken every 24 days (from February 6, 2016 onwards)

Horizontal wind speed, wind direction, atmospheric temperature, relative humidity and rainfall are measured at the predominantly downwind Rundle Road Station. Atmospheric temperature, relative humidity, rainfall and barometric pressure are measured at the predominantly upwind Courtice WPCP Station. Wind speed and wind direction data at the predominantly upwind location are measured and provided by the Courtice Water Pollution Control Plant.

The meteorological sensors at the Rundle Road Station are mounted on an external 10-m aluminum tower and are logged using a digital data acquisition system (DAS). The meteorological equipment includes the following:

Table 3-3 Summary of Meteorological Equipment

Parameter	Equipment
Wind Speed/Wind Direction	Met One Instruments Inc. Model 034B
Temperature	Campbell Scientific Model HMP60
Relative Humidity	Campbell Scientific Model HMP60
Atmospheric Pressure	Campbell Scientific Model CS106
Rainfall	Texas Electronic TE525M

A Campbell Scientific CRX1000 station data acquisition system is used to collect continuous instrument monitoring data and status codes from the ambient air quality monitors. Continuous station data is maintained in the data loggers, and data is viewed locally using a laptop and the relevant DAS software applications. Remote data transmission is accomplished by the periodic transmission of collected station air quality data via cellular phone.

3.2 INSTRUMENTATION ISSUES

A few minor instrumentation issues were encountered during this quarter. A summary of operational issues for each measurement parameter during the monitoring period is presented in **Tables 3-4** to **3-6**.

Table 3-4 Summary of Instrument Issues at Courtice WPCP Station (Predominately Upwind)

Parameter	Issues	Time Frame	Remedial Action
SO_2	Low autocalibration concentration.	January 29, 2016 - March 11, 2016	Replaced perm tube on February 23 and cleaned a plugged valve and replaced perm tube on March 11. These actions did not affect the readings.
NOx	Inconsistency between NO, NO_2 and NO_x measurements due to loose datalogger connection.	January 14 - January 29, and March 10 - March 24, 2016	Connection repaired. Affected January NO_2 readings were replaced by deriving NO_2 concentrations from the NO_x - NO concentrations. Affected March data were replaced by data downloaded directly from monitor. All data intact. Monthly check of cable connections added to scheduled routine maintenance.
$PM_{2.5}$	None		
TSP/Metals Hi-Vol.	Intermittent motor operation	February 3 - February 4, 2016	Replaced motor. All data intact.
PAH/ D/F Hi-Vol	Birds damaged sample pre-filter and started bird nest inside housing	March 28 – March 30, 2016	Removed nesting materials, cleaned hi-vol interior, and installed barrier to prevent bird access.
Other	Datalogger system compromised. Data from datalogger lost for this time period.	February 12 - February 16, 2016	Restarted software program. Password added to all modems.

Table 3-5 Summary of Instrument Issues at Rundle Road Station (Predominately Downwind)

Parameter	Issues	Time Frame	Remedial Action
SO_2	Torn pump diaphragm	Replaced January 29, 2016	Repaired pump and replaced diaphragm. All data intact.
	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
NO_X	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
$PM_{2.5}$	Output data error due to broken physical connection.	January 31 - February 10, 2016	Repaired wire connection. Data downloaded directly from monitor. All data intact.
	High voltage power supply drifted	January 31 - February 10, 2016	Adjusted high voltage power supply. All data intact.
	System error likely due to temporary power outage	Noted February 19, 2016	Re-set instrument. All data intact.
TSP/Metals Hi-Vol.	None		
PAH/ D/F Hi-Vol	None		
Other	Unable to connect to data logger	February 16, 2016	Reset data logger. All data intact.
	Anemometer observed during site visit to be frozen in place due to freezing rain	March 24, 2016 – March 25, 2016	Anemometer could not be accessed due to safety concerns. Data during this time period showing evidence of the anemometer being frozen was invalidated.
	Power outage evident in data files	March 29, 2016 between 3:15 – 3:43	Invalidated hourly data for 3:00.

Table 3-6 Summary of Instrument Issues at Fence Line Station

Parameter	Issues	Time Frame	Remedial Action
TSP/Metals Hi-Vol.	Motor reacting slowly to mass flow controller adjustments	February 6 - February 16, 2016	Oriented temperature probe correctly and readjusted mass flow. 2 samples outside MOECC allowable flow rate – invalidated.

3.3 INSTRUMENTATION RECOVERY RATES

Data recovery rates for each continuous monitor at the three monitoring stations during Quarter 1 (January to March 2016) are presented in **Table 3-7** to **Table 3-8**.

Table 3-7 Summary of Data Recovery Rates for the Courtice WPCP Station (Predominately Upwind) – January to March 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2071	94.8% [C]
NO_X	2074	95.0% [C]
$PM_{2.5}$	2173	99.5% [C]
Temperature	2087	95.6% [C]
Rainfall	2087	95.6% [C]
Relative Humidity	2087	95.6% [C]
Pressure	2087	95.6% [C]
Wind Speed/Direction	2184	100.0% [C]
TSP/Metals [A]	10 [D]	100%
PAHs [A]	5 [D]	100%
Dioxins and Furans [A, B]	6 [D]	100%

Note:

A. Monitoring as per the Ambient Air Monitoring Plan resumed on February 6, 2016 after the Facility was fully operational.

B. Additional sampling for dioxin/furan was conducted from October 21, 2015 to January 25, 2016. The sampling was outside the scope of the Ambient Air Monitoring Plan.

C. Includes instrumentation issues summarized in Table 3-3, quarterly MOECC audit and monthly calibrations.

D. Number of filters/24-hour average samples.

Table 3-8 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – January to March 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
SO_2	2170	99.4% [C]
NO_X	2173	99.5% [C]
$PM_{2.5}$	1841	84.3% [C]
Temperature	2183	100.0% [C]
Rainfall	2183	100.0% [C]
Relative Humidity	2183	100.0% [C]
Wind Speed/Direction	2208	100%
TSP/Metals [A]	10 [D]	100%

Table 3-8 Summary of Data Recovery Rates for the Rundle Road Station (Predominately Downwind) – January to March 2016

Parameter	Valid Measurement Hours	Data Recovery Rate (%)
PAHs [A]	5 [D]	100%
Dioxins and Furans [A, B]	6 [D]	100%

Note:

A. Monitoring as per the Ambient Air Monitoring Plan resumed on February 6, 2016 after the Facility was fully operational.

B. Additional sampling for dioxin/furan was conducted from October 21, 2015 to January 25, 2016. The sampling was outside the scope of the Ambient Air Monitoring Plan.

C. Includes instrumentation issues summarized in Table 3-4, quarterly MOECC audit, monthly calibrations and instrument down time for annual maintenance performed on October 1 and 2.

D. Number of filters/24-hour average samples.

Table 3-9 Summary of Data Recovery Rates for the Fence Line Station – January to March 2016

Parameter	Valid Measurements [B]	Data Recovery Rate (%)
TSP/Metals [A]	8	80%

Note:

A. Monitoring as per the Ambient Air Monitoring Plan started on February 6, 2016 after the Facility was fully operational.

B. Number of filters/24-hour average samples.

C. 2 samples (February 6, 2016 and February 12, 2016) had a flow rate outside of the MOECC allowable range. This data was invalidated.

4.0 SUMMARY OF AMBIENT MEASUREMENTS

The following sections provide summaries of the validated data and the validation done on each parameter.

4.1 METEOROLOGICAL DATA

A summary of the maximum, minimum, arithmetic mean, and standard deviation of the hourly average meteorological parameters measured at the two monitoring stations for the October to December 2015 period are presented in **Table 4-1**.

Table 4-1 Summary of Hourly Meteorological Measurements – January to March 2016

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Temperature	Max	11.5	13.8	C
	Min	-27.2	-27.2	C
	Mean (January)	-2.9	-3.4	C
	Mean (February)	-2.5	-2.9	C
	Mean (March)	1.6	1.3	C
	Mean (Period)	-1.2	-1.6	C
	Standard Deviation	6.3	6.4	C
Rainfall	Max	7.7	6.7	mm
	Min	0.0	0.0	mm
	Mean (January)	0.06	0.07	mm
	Mean (February)	0.06	0.06	mm
	Mean (March)	0.09	0.10	mm
	Mean (Period)	0.07	0.08	mm
	Standard Deviation	0.40	0.40	mm
Relative Humidity	Max	96.2	99.4	%
	Min	25.4	28.1	%
	Mean (January)	70.4	75.2	%
	Mean (February)	67.9	71.8	%
	Mean (March)	71.7	76.2	%
	Mean (Period)	70.1	74.5	%
	Standard Deviation	13.8	14.5	%

Table 4-1 Summary of Hourly Meteorological Measurements – January to March 2016

Parameter		Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)	Units
Pressure [A]	Max	30.4	-	in Hg
	Min	28.8	-	in Hg
	Mean (January)	29.7	-	in Hg
	Mean (February)	29.6	-	in Hg
	Mean (March)	29.7	-	in Hg
	Mean (Period)	29.7	-	in Hg
	Standard Deviation	0.3	-	in Hg
Wind Speed [B]	Max	47.6	40.6	km/hr
	Min	0.0	0.0	km/hr
	Mean (January)	15.0	13.8	km/hr
	Mean (February)	16.0	14.1	km/hr
	Mean (March)	11.7	10.2	km/hr
	Mean (Period)	14.2	12.7	km/hr
	Standard Deviation	7.7	7.2	km/hr

Notes:

A. Pressure is not measured at the Rundle Road Station.

B. Wind speed at Courtice WPCP Station measured at 20-m and at Rundle Road Station at 10-m.

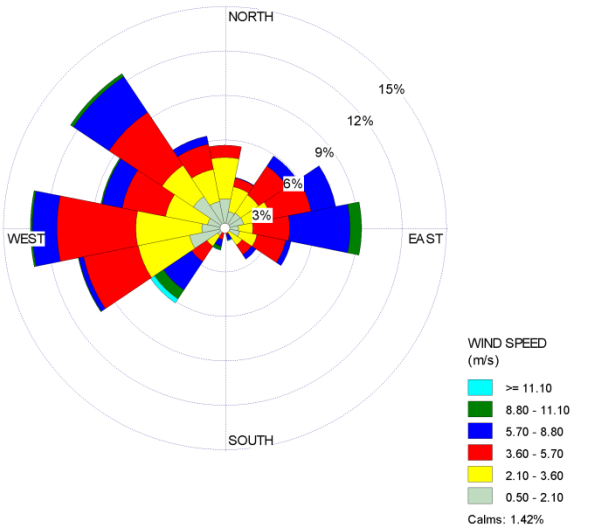
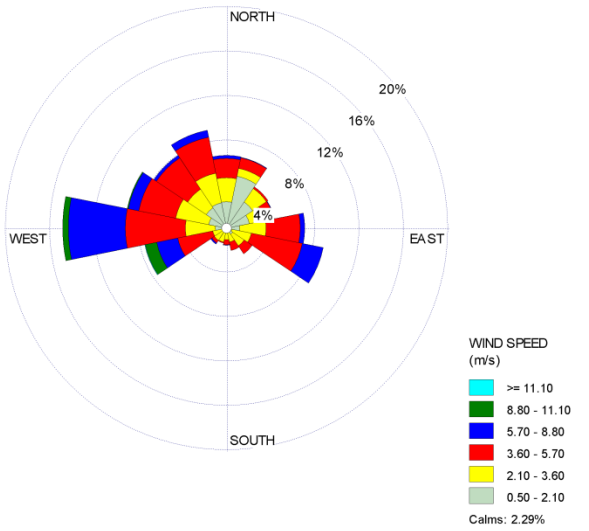
At the Courtice WPCP Station (located near Lake Ontario), wind data were measured and provided by the Courtice Water Pollution Control Plant on a 20-m tower, while at the Rundle Road Station they are measured on a 10-m tower.

Wind roses showing the directionality and speed at each location are presented in **Figure 4-1**. The length of the radial barbs gives the total percent frequency of winds from the indicated direction, while portions of the barbs of different widths indicate the frequency associated with each wind speed category.

Winds over the three-month period at the Courtice WPCP Station occurred predominantly from west to northwesterly directions. Wind contribution from the south was low. Higher wind speeds occurred from easterly and southwesterly directions, and lower wind speeds from northerly directions.

At the Rundle Road Station, the wind rose over the three-month period showed predominant winds occurring from westerly directions. Higher wind speeds are noted occurring from the west-southwest.

Figure 4-1 Wind Roses for January to March 2016

Courtice WPCP Station (Predominately Upwind) at 20-m Above Ground	Rundle Road Station (Predominately Downwind) at 10-m Above Ground
	

4.2 CAC AMBIENT AIR QUALITY MEASUREMENTS

A summary of the maximum, minimum, arithmetic mean and standard deviation of the CAC pollutant concentrations measured at each station are presented in **Table 4-2**. Also presented in this table are the number of exceedances (if any occurred), of the relevant Ontario ambient air quality criteria (AAQC) or health-based standard for each contaminant. All monitored contaminants were below their applicable criteria during the period January to March 2016.

Nitric oxide (NO) has no regulatory criteria as discussed in **Section 4.2.2** below. There are both hourly and daily AAQCs as well as Reg. 419 Schedule 3 criteria for NO_X which are based on health effects of NO_2. As specified in the MOECC's listing of AAQCs (MOECC, 2012a) the AAQC were compared to measured NO_2 concentrations in this report. However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the Schedule 3 criterion for NO_X (MOECC, 2012b) was compared to the monitored NO_X levels.

A comparison of the maximum measured data to their respective air quality criteria is presented graphically in **Figure 4-2**.

Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
SO_2	1	250	690	Maximum	25.6	72.0	14.4	42.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (Januaryr)	1.2	3.4	0.6	1.6
				Mean (February)	1.5	4.2	1.2	3.4
				Mean (March)	1.3	3.6	0.6	1.7
				Mean (Period)	1.3	3.7	0.8	2.2
				Standard Deviation	2.5	7.0	1.0	2.9
				# of Exceedances	0	0	0	0
	24	100	275	Maximum	13.0	36.5	3.2	8.9
				Minimum	0.0	0.0	0.0	0.0
				Mean (Januaryr)	1.2	3.3	0.6	1.6
				Mean (February)	1.5	4.3	1.2	3.4
				Mean (March)	1.3	3.6	0.6	1.7
				Mean (Period)	1.3	3.7	0.8	2.2
				Standard Deviation	1.6	4.6	0.8	2.3
				# of Exceedances	0	0	0	0

Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
$PM_{2.5}$	24	N/A	28 [A]	Maximum	-	29.5	-	43.1
				Minimum	-	0.2	-	0.2
				Mean (Januaryr)	-	7.0	-	11.1
				Mean (February)	-	7.9	-	11.5
				Mean (March)	-	8.5	-	8.4
				Mean (Period)	-	7.8	-	10.1
				Standard Deviation	-	6.2	-	7.5
				# of Exceedances	-	N/A	-	N/A
NO_2	1	200 [B]	400 [B]	Maximum	62.4	125.9	36.2	70.8
				Minimum	0.0	0.0	0.0	0.0
				Mean (Januaryr)	8.0	16.5	8.4	17.2
				Mean (February)	7.1	14.5	6.6	13.6
				Mean (March)	8.2	16.7	6.8	13.8
				Mean (Period)	7.8	16.0	7.3	14.9
				Standard Deviation	7.2	14.9	5.3	10.9
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	23.1	47.8	18.8	39.0
				Minimum	1.3	2.8	0.3	0.6
				Mean (Januaryr)	7.9	16.4	8.3	17.0
				Mean (February)	7.1	14.6	6.8	14.0

Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
				Mean (March)	8.2	16.7	6.7	13.5
				Mean (Period)	7.8	16.0	7.3	14.8
				Standard Deviation	4.1	8.4	3.7	7.6
				# of Exceedances	0	0	0	0
NO[C]	1	NA	NA	Maximum	58.5	79.9	30.7	43.1
				Minimum	0.0	0.0	0.0	0.0
				Mean (Januaryr)	2.2	2.9	2.3	3.1
				Mean (February)	1.5	2.0	2.0	2.7
				Mean (March)	2.4	3.2	2.5	3.3
				Mean (Period)	2.1	2.8	2.3	3.1
				Standard Deviation	4.9	6.6	2.2	2.9
				# of Exceedances	N/A	N/A	N/A	N/A
	24	NA	NA	Maximum	21.9	29.7	6.7	9.0
				Minimum	0.1	0.1	1.1	1.5
				Mean (Januaryr)	2.1	2.9	2.3	3.1
				Mean (February)	1.5	2.1	2.1	2.8
				Mean (March)	2.4	3.2	2.5	3.3
				Mean (Period)	2.1	2.8	2.3	3.1
				Standard Deviation	2.6	3.5	0.9	1.2
				# of Exceedances	N/A	N/A	N/A	N/A

Table 4-2 Summary of Ambient CAC Monitoring Data – January to March 2016

Pollutant	Averaging Period	AAQC / Schedule 3 / HHRA Health-Based Standards			Courtice WPCP Station (Predominately Upwind)		Rundle Road Station (Predominately Downwind)	
		ppb	µg/m³		Concentration (ppbv)	Concentration (µg/m³)	Concentration (ppbv)	Concentration (µg/m³)
NO_X	1	200 [B]	400 [B]	Maximum	85.3	178.9	57.1	123.0
				Minimum	0.0	0.0	0.0	0.0
				Mean (Januaryr)	10.1	20.9	9.5	19.5
				Mean (February)	8.1	16.7	7.4	15.2
				Mean (March)	10.5	21.4	7.9	16.0
				Mean (Period)	9.7	19.9	8.3	16.9
				Standard Deviation	11.0	22.8	6.6	13.6
				# of Exceedances	0	0	0	0
	24	100 [B]	200 [B]	Maximum	44.7	92.7	24.4	50.5
				Minimum	2.0	4.2	0.2	0.5
				Mean (Januaryr)	10.0	20.6	9.4	19.3
				Mean (February)	8.2	17.0	7.6	15.6
				Mean (March)	10.5	21.4	7.7	15.6
				Mean (Period)	9.7	19.9	8.2	16.9
				Standard Deviation	6.3	13.1	4.5	9.1
				# of Exceedances	0	0	0	0

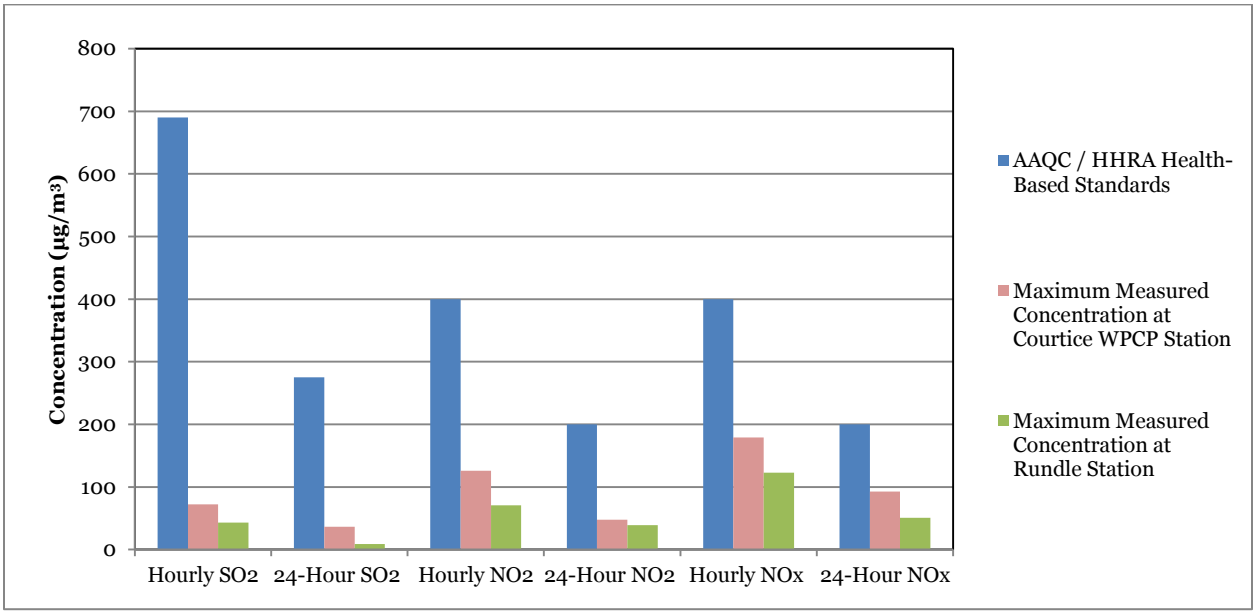
Note:

A. Canadian Ambient Air Quality Standard for Respirable Particulate Matter. The Respirable Particulate Matter Objective is referenced to the 98th percentile over 3 consecutive years.

B. As per current version (April 2012) of Reg 419 Summary of Standards and Guidelines, the air standard for NO_X is compared to a monitored NO_X concentration, although the Reg419 Schedule 3 standard for NO_X is based on health effects of NO_2.

C. NO has no regulatory criteria.

Figure 4-2 Comparison of NO_2 / NO_X and SO_2 Ambient Air Quality Monitoring Data to Applicable Criteria



Detailed discussion for each measured contaminant is presented in the following sections.

4.2.1 Sulphur Dioxide (SO_2)

Data summaries are presented in **Appendix A** for sulphur dioxide for each station and month as well as time history plots of the hourly and 24-hour average SO_2 concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 690 µg/m³ and 275 µg/m³ are shown with blue lines the respective plot. As shown in these figures, measured ambient SO_2 concentrations at both stations were well below the criteria.

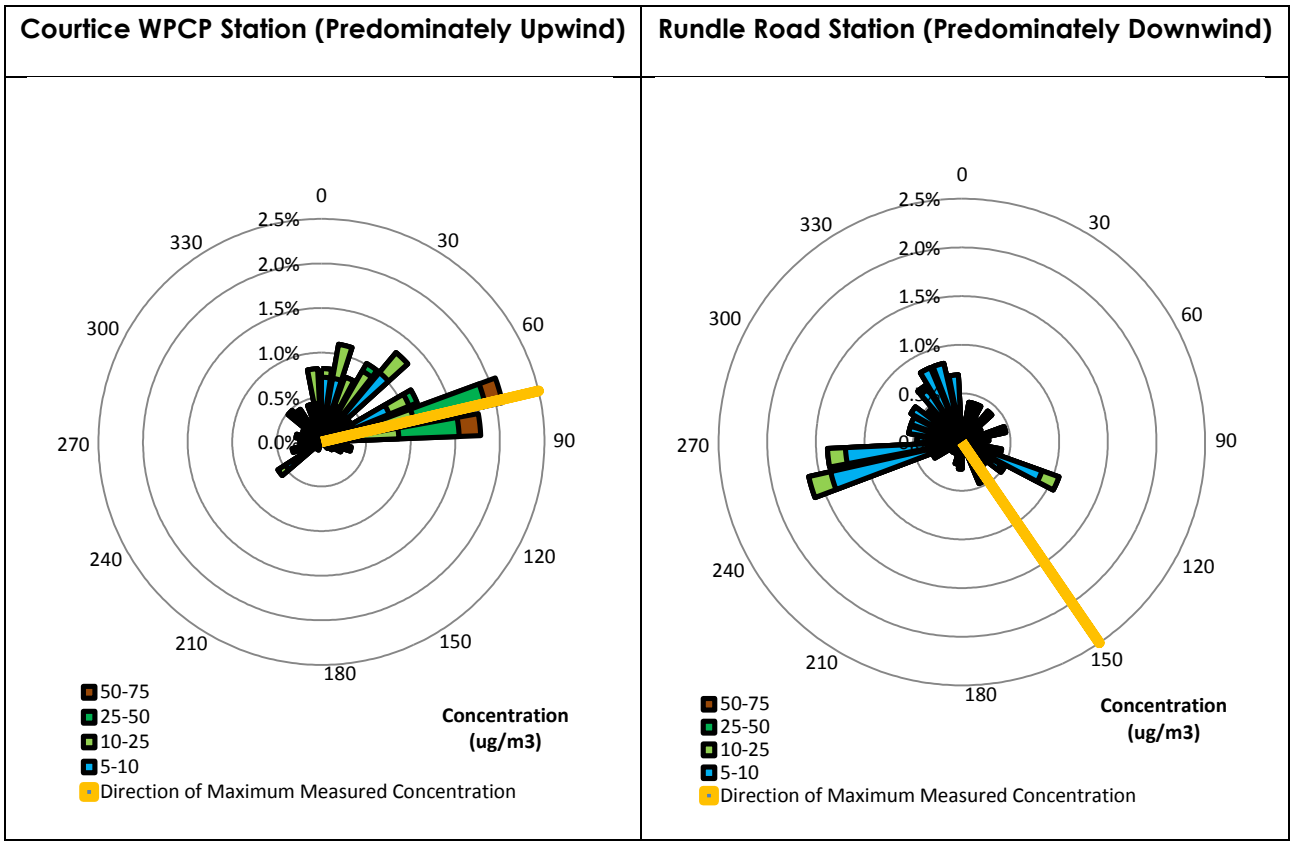
The maximum hourly and 24-hour average concentrations measured at the Courtice WPCP Station during January to March 2016 were 72.0 and 36.5 µg/m³ respectively, which are 10.4% and 13.3% of the applicable 1-hour and 24-hour ambient air quality criteria.

The maximum hourly and 24-hour average concentrations measured at the Rundle Road Station during this quarter were 42.8 and 8.9 µg/m³ respectively, which are 6.2% and 3.2% of the applicable 1-hour and 24-hour ambient air quality criteria.

Pollution roses of hourly average SO_2 concentrations measured at the Courtice WPCP Station and Rundle Road Station are presented in **Figure 4-3**. The pollution rose plots present measured hourly average contaminant concentrations versus measured wind direction (over 10° wind sectors). Concentrations less than 5µg/m³, which account for 84% of the measurements at the Courtice WPCP and 82% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

For the Courtice WPCP Station, higher hourly concentrations were measured when winds were blowing from easterly and east-northeasterly directions. The highest measured concentration at this station was from the east-northeast. For the Rundle Road Station, higher hourly concentrations occurred for west-southwesterly and southeasterly winds. The maximum measured concentration at this station occurred for southeasterly winds.

Figure 4-3 Pollution Roses of Measured Hourly Average SO_2 Concentrations – January to March 2016



4.2.2 Nitrogen Dioxide (NO_2)

Nitrogen oxides (NO_X) are almost entirely made up of nitric oxide (NO) and nitrogen dioxide (NO_2). Together, they are often referred to as NO_X. Most NO_2 in the atmosphere is formed by the oxidation of NO, which is emitted directly by combustion processes, particularly those at high temperature and pressure. Exposure to both NO and NO_2 can result in adverse health effects to an exposed population. NO_2 is the regulated form of NO_X. Similar to other jurisdictions (e.g., Alberta Environment, World Health Organization),the O. Reg. 419/05 Schedule 3 standards for NO_X are based on health effects of NO_2, as health effects are seen at much lower

concentrations of NO_2 than NO. In this report, because NO_2 is the regulated form of NO_X, the AAQC were compared to measured NO_2 concentrations (as per MOECC 2012a). However, as per the current April 2012 version of O. Reg. 419 Summary of Standards and Guidelines, the Schedule 3 NO_X criteria were also compared to the monitored NO_X concentrations (see **Section 4.2.3** below).

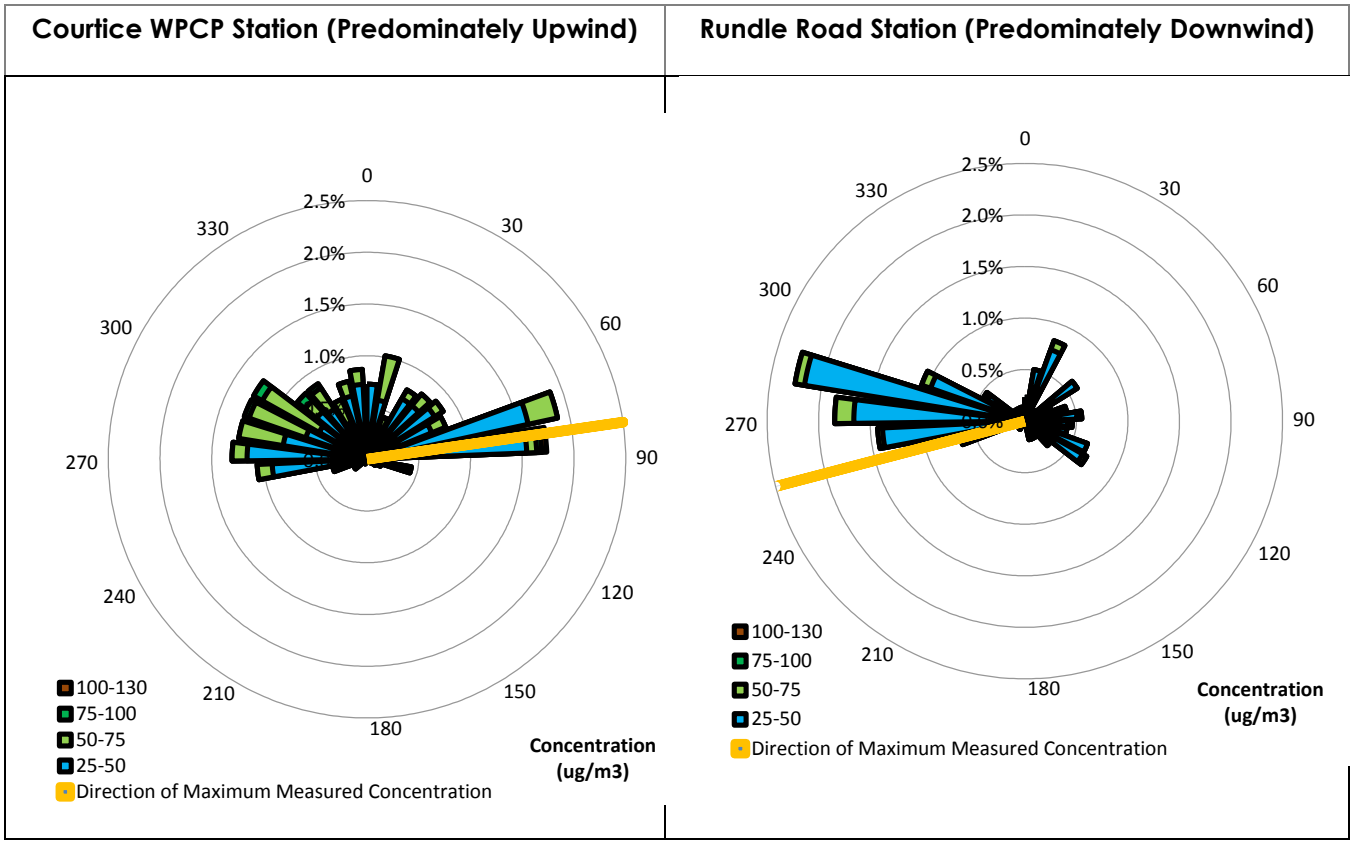
Data summaries are presented in **Appendix B** for nitrogen dioxide for each station and month as well as time history plots of the hourly and 24-hour average NO_2 concentrations. For the hourly and 24-hour averages, the Ontario AAQCs of 400 µg/m^3 and 200 µg/m^3 are shown with blue lines on the respective plot. As shown in these figures, measured ambient NO_2 concentrations at both stations were well below the criteria.

The maximum hourly and 24-hour average NO_2 concentrations measured at the Courtice WPCP Station during this quarter were 125.9 and 47.8 µg/m^3 respectively, which are 31.5% and 23.9% of the applicable 1-hour and 24-hour ambient air quality criteria. At the Rundle Road Station, the maximum measured hourly and 24-hour average concentrations were 70.8 and 39.0 µg/m^3, which are 17.7% and 19.5% of the applicable 1-hour and 24-hour ambient air quality criteria.

Pollution roses of measured hourly average NO_2 concentrations are presented in **Figure 4-4**. Concentrations less than 25µg/m^3, which account for 79% of the measurements at the Courtice WPCP and 83% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

The measured hourly average concentrations at the Courtice WPCP Station were higher for winds from easterly and northwesterly directions. The maximum measured hourly average NO_2 concentration for the Courtice WPCP Station occurred for an easterly wind. For the Rundle Road Station, higher measured hourly average concentrations occurred for winds blowing from the west. The maximum measured hourly average concentration at the Rundle Road Station was from the west-southwest.

Figure 4-4 Pollution Roses of Measured Hourly Average NO_2 Concentrations – January to March 2016



4.2.3 Nitrogen Oxides (NO_X)

Data summaries are presented in **Appendix C** for nitrogen oxides for each station and month as well as time history plots of the hourly and 24-hour average NO_X concentrations. For the hourly and 24-hour averages, the Ontario Schedule 3 criteria of 400 µg/m³ and 200 µg/m³ are shown with blue lines on the respective plot. As shown in these figures, the maximum measured ambient hourly and 24-hour average NO_X concentrations at the Courtice WPCP Station were below the criteria during this quarter. The measured concentrations at the Rundle Road Station were also well below the criteria.

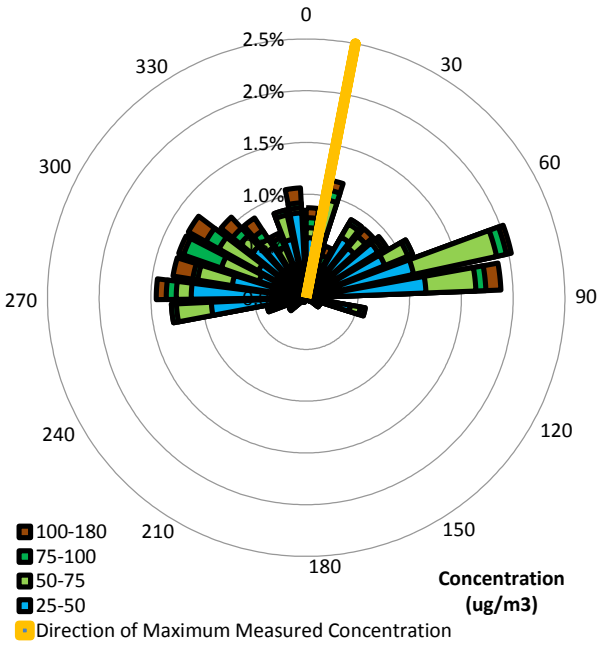
As shown in **Table 4-2**, the maximum hourly average NO_X concentration measured at the Courtice WPCP Station was 178.9 µg/m³, which is 44.7% of the 1-hour ambient criteria. The 24-hour average NO_X concentration measured at this station was 92.7 µg/m³, which is 46.4% of the applicable 24-hour air quality criteria. At the Rundle Road Station, the maximum hourly and 24-hour average concentrations measured during this quarter were 123.0 and 50.5 µg/m³, which are 30.7% and 25.2% of the applicable air quality criteria.

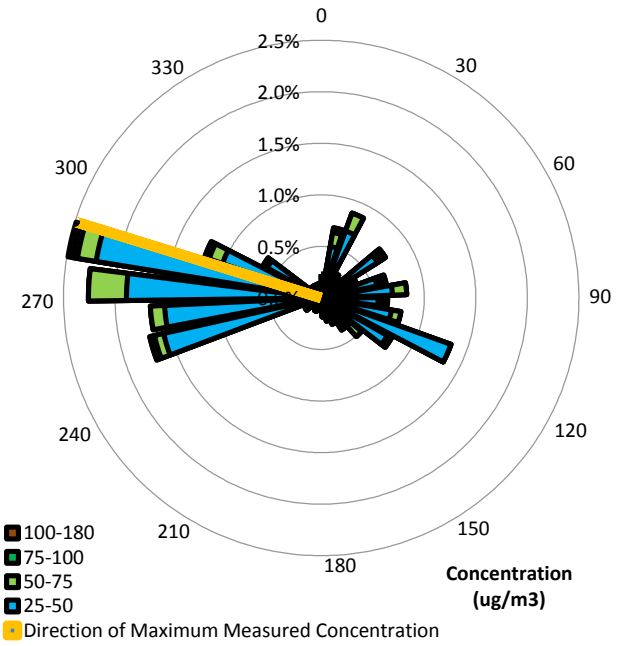
Pollution roses of measured hourly average NO_X concentrations for the Courtice WPCP Station and the Rundle Road Station are presented in **Figure 4-5**. Concentrations less than 25µg/m^3, which account for 77% of the measurements at the Courtice WPCP and 77% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

In **Figure 4-5**, higher measured hourly average NO_X concentrations at the Courtice WPCP Station occurred for winds blowing from northwesterly and easterly directions. The maximum measured concentration was for a wind blowing from the north-northeast. At the Rundle Road Station, higher measured hourly average concentrations occurred for westerly winds. The maximum measured hourly average NO_X concentration occurred for a west-northwesterly wind.

Figure 4-5 Pollution Roses of Measured Hourly Average NO_X Concentrations – January to March 2016

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)





4.2.4 Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)

Data summaries and time history plots of measured 24-hour average concentrations are presented in **Appendix D** for $PM_{2.5}$ for the Courtice WPCP and Rundle Road Stations.

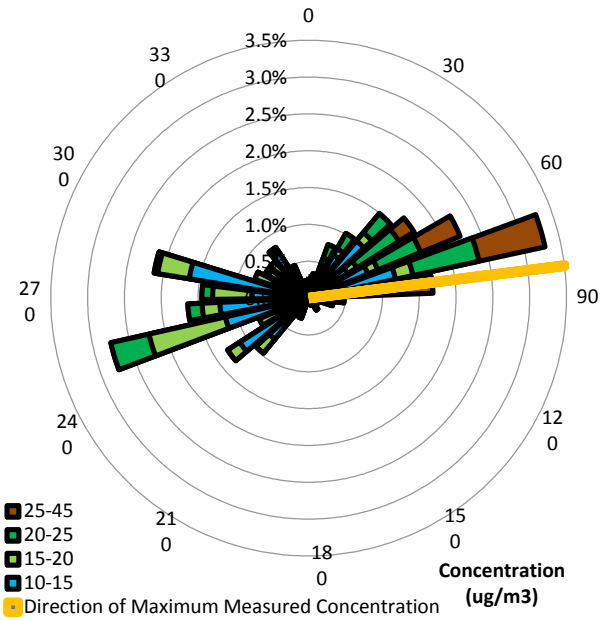
The maximum measured 24-hour average $PM_{2.5}$ concentrations at the Courtice WPCP and the Rundle Road Stations were 29.5 µg/m^3 and 43.1 µg/m^3 during this quarter. It should be noted that since an exceedance of the criteria for $PM_{2.5}$ requires the average of the 98th percentile levels in each of three consecutive years to be greater than 28 µg/m^3 (CAAQS) or 30 µg/m^3 (HHRA standard) whereas the $PM_{2.5}$ measurement period at both stations in the report was three months, there is insufficient data in a quarter to determine with any certainty if exceedances of the CAAQS/HHRA criteria would occur. Discussion of $PM_{2.5}$ measurements with respect to the CAAQS/HHRA criteria will be provided in the 2016 annual report, at which time sufficient data will have been collected to make preliminary comparisons.

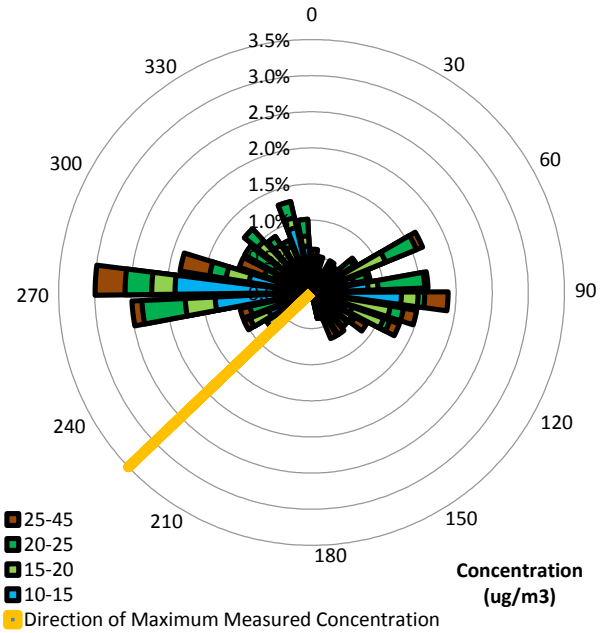
Pollution roses showing the measured 24-hour average ambient $PM_{2.5}$ concentrations versus direction are shown in **Figure 4-6** for both monitoring stations. Concentrations less than 10µg/m3, which account for 76% of the measurements at the Courtice WPCP and 48% at the Rundle Road Station, have been removed from the plot to allow the distribution of maximum levels to be more clearly shown in the figure.

The maximum measured concentrations occurred for east-northeasterly winds for the Courtice WPCP Station. The maximum measured concentration occurred for an easterly wind. For the Rundle Road Station, higher measured 24-hour average concentrations occurred for westerly and easterly winds. The maximum measured concentration occurred for a southwesterly wind.

Figure 4-6 Pollution Roses of Measured 24-Hour Average $PM_{2.5}$ Concentrations – January to March 2016

Courtice WPCP Station (Predominately Upwind)	Rundle Road Station (Predominately Downwind)





4.3 AMBIENT TSP / METALS CONCENTRATIONS

A summary of the maximum and minimum ambient TSP and metals concentrations (for a daily averaging period) are presented in **Table 4-3**. A detailed summary of the concentrations measured for each sample is presented in **Appendix F**.

The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable 24-hour criteria (shown in Table 4-3 below) at all three stations.

Table 4-3 Summary of Measured Ambient TSP/Metals Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)			Fence Line		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Particulate	µg/m³	120	120	30	9	0	32	10	0	51	13	0
Total Mercury (Hg)	µg/m³	2	2	1.33E-05	5.74E-06	0	1.86E-05	5.55E-06	0	1.24E-05	5.77E-06	0
Aluminum (Al)	µg/m³	4.8	-	9.99E-02	3.40E-02	0	1.41E-01	4.94E-02	0	1.85E-01	5.25E-02	0
Antimony (Sb)	µg/m³	25	25	3.38E-03	2.87E-03	0	3.10E-03	2.77E-03	0	3.37E-03	2.88E-03	0
Arsenic (As)	µg/m³	0.3	0.3	2.03E-03	1.72E-03	0	1.86E-03	1.66E-03	0	2.02E-03	1.73E-03	0
Barium (Ba)	µg/m³	10	10	8.09E-03	2.93E-03	0	9.66E-03	2.69E-03	0	1.11E-02	3.23E-03	0
Beryllium (Be)	µg/m³	0.01	0.01	3.38E-04	2.87E-04	0	3.10E-04	2.77E-04	0	3.37E-04	2.88E-04	0
Bismuth (Bi)	µg/m³	-	-	2.03E-03	1.72E-03	-	1.86E-03	1.66E-03	-	2.02E-03	1.73E-03	-
Boron (B)	µg/m³	120	-	2.03E-03	1.72E-03	0	1.86E-03	1.66E-03	0	2.02E-03	1.73E-03	0
Cadmium (Cd)	µg/m³	0.025	0.025	6.75E-04	5.74E-04	0	6.21E-04	5.55E-04	0	1.13E-02	5.77E-04	0
Chromium (Cr)	µg/m³	0.5	-	3.08E-03	1.44E-03	0	1.55E-03	1.39E-03	0	8.22E-03	1.44E-03	0
Cobalt (Co)	µg/m³	0.1	0.1	6.75E-04	5.74E-04	0	6.21E-04	5.55E-04	0	6.73E-04	5.77E-04	0
Copper (Cu)	µg/m³	50	-	1.27E-01	9.76E-03	0	6.31E-02	1.28E-02	0	4.10E-02	1.93E-02	0
Iron (Fe)	µg/m³	4	-	4.13E-01	9.05E-02	0	4.79E-01	1.33E-01	0	9.14E-01	1.01E-01	0
Lead (Pb)	µg/m³	0.5	0.5	4.59E-03	8.61E-04	0	4.26E-03	8.32E-04	0	6.69E-03	9.31E-04	0
Magnesium (Mg)	µg/m³	-	-	1.70E-01	5.52E-02	-	2.41E-01	5.55E-02	-	2.69E-01	8.02E-02	-
Manganese (Mn)	µg/m³	0.4	-	2.97E-02	2.76E-03	0	1.93E-02	3.33E-03	0	2.12E-02	4.67E-03	0
Molybdenum (Mo)	µg/m³	120	-	3.11E-03	8.61E-04	0	9.31E-04	8.32E-04	0	1.01E-03	8.65E-04	0
Nickel (Ni)	µg/m³	0.2	-	1.01E-03	8.61E-04	0	9.31E-04	8.32E-04	0	1.01E-03	8.65E-04	0
Phosphorus (P)	µg/m³	-	-	5.28E-02	7.18E-03	-	5.09E-02	7.17E-03	-	3.34E-01	7.21E-03	-
Selenium (Se)	µg/m³	10	10	3.38E-03	2.87E-03	0	3.10E-03	2.77E-03	0	3.37E-03	2.88E-03	0
Silver (Ag)	µg/m³	1	1	1.69E-03	1.44E-03	0	1.55E-03	1.39E-03	0	1.68E-03	1.44E-03	0
Strontium (Sr)	µg/m³	120	-	3.92E-03	1.61E-03	0	6.65E-03	1.58E-03	0	1.28E-02	1.85E-03	0
Thallium (Tl)	µg/m³	-	-	3.38E-03	2.87E-03	-	3.10E-03	2.77E-03	-	3.37E-03	2.88E-03	-
Tin (Sn)	µg/m³	10	10	3.38E-03	2.87E-03	0	3.10E-03	2.77E-03	0	3.37E-03	2.88E-03	0
Titanium (Ti)	µg/m³	120	-	6.75E-03	2.87E-03	0	8.07E-03	2.77E-03	0	1.72E-02	2.88E-03	0
Vanadium (V)	µg/m³	2	1	1.69E-03	1.44E-03	0	1.55E-03	1.39E-03	0	1.68E-03	1.44E-03	0
Zinc (Zn)	µg/m³	120	-	4.82E-02	9.10E-03	0	5.15E-02	7.79E-03	0	7.41E-02	1.32E-02	0
Zirconium (Zr)	µg/m³	20	-	1.69E-03	1.44E-03	0	1.55E-03	1.39E-03	0	1.68E-03	1.44E-03	0
Total Uranium (U)	µg/m³	1.5	-	1.52E-04	1.29E-04	0	1.40E-04	1.25E-04	0	1.52E-04	1.30E-04	0

4.4 AMBIENT PAH CONCENTRATIONS

A summary of the maximum and minimum ambient PAH concentrations (for a daily averaging period) are presented in **Table 4-4**. In this summary, both individual PAHs as well as a total PAH concentration are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix G**.

The maximum measured concentrations of the PAHs with MOECC air quality criteria were well below their applicable 24-hour criteria, with the exception of two (2) measurements of benzo(a)pyrene (B(a)P collected at the two monitoring stations.

The current Ontario 24-hour B(a)P AAQC was introduced in 2011 and levels above this recently enacted AAQC are commonly measured throughout Ontario. B(a)P measurement data available from the National Air Pollutant Surveillance (NAPS) network for Ontario in 2012 (for Windsor, Toronto and Hamilton), all had maximum levels above the AAQC (varying between 716% -2920% of the criteria). In 2011, NAPS data available for seven Ontario stations (Windsor, Toronto, Etobicoke, Hamilton, Simcoe, Pt. Petrie and Burnt Island) showed exceedances at six of the seven stations, with only the remote Burnt Island Ontario station reporting a maximum level below the MOECC AAQC. In 2010, all of these stations, including the Burnt Island station, measured B(a)P levels above the AAQC.

Benzo(a)pyrene (B(a)P) is a byproduct of a wide variety of natural and man-made combustion processes (including motor vehicles, natural gas, wood, refuse, oil, forest fires, etc) and is widely present in the environment (including being present in soil and water).

The benzo(a)pyrene level in two (2) samples, one collected at the Courtice WPCP Station and one collected at the Rundle Road Station on February 18, 2016, exceeded the Ontario AAQC by 17% and 315%, respectively. All samples were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOECC O. Reg. 419 24-hour average guideline, and the HHRA health based standard. A summary of the wind directions and potential source contributions for these measurements is presented in **Table 4-5**.

Based on the air quality assessments completed during the Environmental Assessment Study and the Environmental Compliance Approval application for the DYEC, the facility will not be a significant contributor of B(a)P. Therefore, ambient B(a)P levels are not expected to be substantially impacted by the operation of the DYEC.

Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Benzo(a)pyrene	ng/m³	0.05 [A] 5 [B] 1.1 [C]	1	5.85E-02	5.52E-03	1 0 0	2.07E-01	1.33E-02	1 0 0
1-Methylnaphthalene	ng/m³	12,000	-	4.50E+00	1.61E+00	0	6.32E+00	1.33E+00	0
2-Methylnaphthalene	ng/m³	10,000	-	8.25E+00	2.43E+00	0	1.00E+01	1.94E+00	0
Acenaphthene	ng/m³	-	-	2.39E+00	4.75E-01	-	1.16E+00	2.60E-01	-
Acenaphthylene	ng/m³	3500	-	2.79E-01	6.87E-02	0	8.40E-01	7.24E-02	0
Anthracene	ng/m³	200	-	1.10E-01	6.87E-02	0	1.08E-01	7.24E-02	0
Benzo(a)anthracene	ng/m³	-	-	1.10E-01	6.87E-02	-	2.30E-01	7.24E-02	-
Benzo(a)fluorene	ng/m³	-	-	2.20E-01	1.37E-01	-	2.17E-01	1.45E-01	-
Benzo(b)fluoranthene	ng/m³	-	-	2.49E-01	1.03E-01	-	4.90E-01	7.24E-02	-
Benzo(b)fluorene	ng/m³	-	-	2.20E-01	1.37E-01	-	2.17E-01	1.45E-01	-
Benzo(e)pyrene	ng/m³	-	-	2.20E-01	1.37E-01	-	2.17E-01	1.45E-01	-
Benzo(g,h,i)perylene	ng/m³	-	-	1.10E-01	6.87E-02	-	1.08E-01	7.24E-02	-
Benzo(k)fluoranthene	ng/m³	-	-	1.10E-01	6.87E-02	-	1.08E-01	7.24E-02	-
Biphenyl	ng/m³	-	-	2.12E+00	9.96E-01	-	2.24E+00	8.67E-01	-
Chrysene	ng/m³	-	-	2.08E-01	6.87E-02	-	4.05E-01	7.24E-02	-
Dibenz(a,h)anthracene [D]	ng/m³	-	-	1.10E-01	6.87E-02	-	1.08E-01	7.24E-02	-
Dibenzo(a,c) anthracene + Picene [D]	ng/m³	-	-	4.39E-01	2.07E-01	-	4.33E-01	2.07E-01	-
Fluoranthene	ng/m³	-	-	5.70E-01	3.72E-01	-	1.11E+00	3.15E-01	-

Table 4-4 Summary of Measured Ambient PAH Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
Indeno (1,2,3-cd)pyrene	ng/m^3	-	-	1.10E-01	6.87E-02	-	1.81E-01	7.24E-02	-
Naphthalene	ng/m^3	22,500	22,500	2.11E+01	1.11E+01	0	3.51E+01	9.88E+00	0
o-Terphenyl	ng/m^3	-	-	2.20E-01	1.37E-01	-	2.17E-01	1.45E-01	-
Perylene	ng/m^3	-	-	2.20E-01	1.37E-01	-	2.17E-01	1.45E-01	-
Phenanthrene	ng/m^3	-	-	2.36E+00	1.36E+00	-	2.63E+00	1.17E+00	-
Pyrene	ng/m^3	-	-	5.28E-01	1.03E-01	-	1.02E+00	1.04E-01	-
Tetralin	ng/m^3	-	-	2.11E+00	8.79E-01	-	2.90E+00	6.36E-01	-
Total PAH [E]	ng/m^3	-	-	45.2	22.0	-	65.8	19.4	-

Notes:

A. Ontario Ambient Air Quality Criteria. The standard for benzo(a)pyrene (B(a)P) is for B(a)P as a surrogate for PAHs.

B. O. Reg. 419 Schedule 6 Upper Risk Thresholds.

C. O. Reg. 419 24 Hour Guideline

D. Based on laboratory analyses, dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene. Picene elutes after dibenz(a,h)anthracene

E. The reported total PAH is the sum of all analysed PAH species.

Table 4-5 Source Contribution Analysis – Quarter 1 2016 B(a)P Exceedances

Date	Station	% above the MOECC B(a)P Criterion	Wind Direction	Potential Source Contributions
February 18, 2016	Courtice WPCP	17%	North	Land use in this direction is primarily agricultural with Highway 401and a CN rail line also located to the north.
February 18, 2016	Rundle Road	315%	North	Land use in this wind direction is mainly agricultural.

4.5 AMBIENT DIOXIN AND FURAN CONCENTRATIONS

A summary of the maximum and minimum ambient D/F concentrations (for a daily averaging period) are presented in **Table 4-6**. In this summary, both individual dioxin and furan concentrations (pg/m^3) as well as the total toxic equivalency concentration (TEQ) are reported. A detailed summary of the concentrations measured for each sample is presented in **Appendix H**.

The maximum measured toxic equivalent dioxin and furan concentrations at both stations were below the applicable 24-hour criteria AAQC of 0.1 pg TEQ/m^3 (as shown in Table 4-6).

Table 4-6 Summary of Measured Ambient Dioxin and Furan Concentrations

Contaminant	Units	MOECC Criteria	HHRA Health Based Standard	Courtice WPCP (Predominately Upwind)			Rundle Road (Predominately Downwind)		
				Max	Min	No. of Exceedances	Max	Min	No. of Exceedances
2,3,7,8-Tetra CDD *	pg/m^3			5.27E-03	2.61E-03		4.81E-03	2.61E-03	
1,2,3,7,8-Penta CDD	pg/m^3			7.31E-03	3.31E-03		6.64E-03	2.49E-03	
1,2,3,4,7,8-Hexa CDD	pg/m^3			1.12E-02	2.50E-03		8.86E-03	2.91E-03	
1,2,3,6,7,8-Hexa CDD	pg/m^3			2.45E-02	3.31E-03		1.47E-02	3.49E-03	
1,2,3,7,8,9-Hexa CDD	pg/m^3			3.03E-02	4.39E-03		2.21E-02	3.01E-03	
1,2,3,4,6,7,8-Hepta CDD	pg/m^3			2.09E-01	2.40E-02		2.37E-01	1.85E-02	
Octa CDD	pg/m^3			5.22E-01	1.64E-01		4.89E-01	9.22E-02	
Total Tetra CDD	pg/m^3			5.19E-02	3.04E-03		3.71E-02	2.61E-03	
Total Penta CDD	pg/m^3			9.05E-02	4.45E-03		2.79E-02	3.62E-03	
Total Hexa CDD	pg/m^3			2.19E-01	2.05E-02		1.37E-01	1.34E-02	
Total Hepta CDD	pg/m^3			4.54E-01	1.22E-01		4.40E-01	4.97E-02	
2,3,7,8-Tetra CDF **	pg/m^3			3.00E-02	2.64E-03		2.10E-02	4.48E-03	
1,2,3,7,8-Penta CDF	pg/m^3	-	-	1.10E-02	2.36E-03	N/A	6.36E-03	2.91E-03	N/A
2,3,4,7,8-Penta CDF	pg/m^3			2.04E-02	2.36E-03		8.30E-03	2.91E-03	
1,2,3,4,7,8-Hexa CDF	pg/m^3			6.91E-02	2.92E-03		2.10E-02	2.49E-03	
1,2,3,6,7,8-Hexa CDF	pg/m^3			2.35E-02	2.78E-03		8.58E-03	2.35E-03	
2,3,4,6,7,8-Hexa CDF	pg/m^3			3.70E-02	2.92E-03		1.13E-02	2.49E-03	
1,2,3,7,8,9-Hexa CDF	pg/m^3			7.04E-03	3.20E-03		4.91E-03	2.63E-03	
1,2,3,4,6,7,8-Hepta CDF	pg/m^3			1.66E-01	3.59E-03		4.26E-02	3.76E-03	
1,2,3,4,7,8,9-Hepta CDF	pg/m^3			2.53E-02	2.78E-03		7.19E-03	2.77E-03	
Octa CDF	pg/m^3			1.82E-01	5.93E-03		4.95E-02	4.62E-03	
Total Tetra CDF	pg/m^3			3.05E-01	2.64E-03		9.16E-02	4.48E-03	
Total Penta CDF	pg/m^3			2.51E-01	2.36E-03		7.28E-02	2.91E-03	
Total Hexa CDF	pg/m^3			3.05E-01	2.92E-03		7.44E-02	3.33E-03	
Total Hepta CDF	pg/m^3			2.84E-01	4.00E-03		7.64E-02	4.05E-03	
TOTAL TOXIC EQUIVALENCY [A]	pg TEQ/m^3	0.1 [B] 1 [C]	-	0.044	0.011	0 0	0.026	0.011	0 0

Note:

A. Total Toxicity Equivalent (TEQ) concentration contributed by all dioxins, furans and dioxin-like PCBs calculated as per O. Reg. 419 methodology using corresponding WHO_{2005} toxic equivalency factors (TEFs) and a value of half the minimum detection limit (MDL) substituted for concentrations less than the MDL.

B. Ontario Ambient Air Quality Criteria

C. O. Reg. 419 Schedule 6 Upper Risk Thresholds

* CDD - Chloro Dibenzo-p-Dioxin, ** CDF - Chloro Dibenzo-p-Furan

5.0 CONCLUSIONS

This quarterly report provides a summary of the ambient air quality data collected at the two monitoring stations located predominantly upwind and downwind in the vicinity of the DYEC for the period October to December 2015.

The following observations and conclusions were made from a review of the measured ambient air quality monitoring data:

1. Measured concentrations of NO_2, SO_2 and $PM_{2.5}$ were below the applicable O. Reg. 419/05 criteria or human health risk assessment (HHRA) health-based standards presented in **Table** 2-2 of this report;

2. Since the Canadian Ambient Air Quality Standard (CAAQS) for $PM_{2.5}$ is based on a 98th percentile level over 3 years, whereas the $PM_{2.5}$ measurement period at both stations for this quarterly report was three months, there is insufficient data collected to determine with any certainty if exceedances of the CAAQS would occur. Therefore no comparison of the measured $PM_{2.5}$ data during this quarter to the CAAQS was conducted for this report, as it would not be scientifically accurate or representative;

3. The maximum measured concentrations of TSP and all metals with MOECC air quality criteria were well below their applicable criteria (as presented in Table 2.3 in this report);

4. The maximum measured concentrations of all PAHs with MOE air quality criteria were well below their applicable criteria shown in Table 2.4, with the exception of the 24-hour benzo(a)pyrene concentration in one sample measured at the Courtice WPCP Station and one sample measured at the Rundle Road Station, which exceeded the applicable Ontario Ambient Air Quality Criteria by 17% and 315%, respectively. The measurements were however, well below the MOECC Schedule 6 Upper Risk Threshold, the MOE O. Reg. 419 24-hour average guideline, and the HHRA health based standard;

5. The maximum measured toxic equivalent dioxin and furan concentration was below the applicable criteria presented in Table 2.4.

6. In summary, the measured concentrations of those air contaminants monitored were below their applicable MOECC criteria during the monitoring period between January and March 2016, with the exception of benzo(a)pyrene. All measured levels of the monitored contaminants were below their applicable HHRA health-based standards

6.0 REFERENCES

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Appendix A SO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

SO2 - COURTICE
January 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.1	0.2	0.8	0.3	0.2	0.1	0.0	0.2	0.2	0.4	0.5	0.2	0.2	0.2	0.4	0.5	0.3	0.3	0.3	0.5	0.2	0.2	0.0	0.2	24	0.8	0.0	0.3	0	0
2	0.2	0.1	0.2	0.1	0.0	0.1	0.7	0.2	0.2	0.8	0.9	0.5	0.4	0.3	0.2	0.2	0.3	0.2	0.7	1.3	1.1	1.1	1.3	0.4	24	1.3	0.0	0.5	0	0
3	1.7	0.9	0.9	1.0	0.9	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.4	0.3	0.2	0.0	0.1	1.1	1.2	1.2	0.0	0.0	0.0	24	1.7	0.0	0.7	0	0
4	1.2	3.8	4.8	8.5	3.7	4.8	1.6	6.2	7.6	5.0	2.0	4.1	3.7	6.6	2.3	2.7	1.5	0.0	0.0	0.0	7.5	6.0	1.5	10.3	24	10.3	0.0	4.0	0	0
5	2.4	0.0	0.0	0.0	2.2	1.2	2.1	0.4	0.0	1.4	5.1	5.1	5.8	5.4	9.2	3.2	3.2	1.4	1.0	1.2	1.9	3.3	3.2	2.1	24	9.2	0.0	2.5	0	0
6	0.9	2.6	2.3	2.4	3.1	3.1	3.1	3.8	3.1	5.2	12.0	11.0	9.8	11.7	7.5	4.8	4.8	6.2	5.6	4.5	4.9	4.3	3.7	4.0	24	12.0	0.9	5.2	0	0
7	3.3	3.4	4.8	9.1	12.9	7.4	12.7	13.0	10.0	8.2	5.6	4.9	4.3	3.9	4.7	5.9	7.8	6.0	32.6	15.0	12.7	15.6	9.1	11.3	24	32.6	3.3	9.3	0	0
8	11.7	6.7	3.7	3.7	3.9	4.8	3.6	4.0	4.8	7.5	36.8	37.3	63.8	68.0	72.0	45.4	10.4	4.4	4.4	4.9	2.9	2.5	2.2	1.9	24	72.0	1.9	17.1	0	0
9	1.3	1.0	1.1	1.5	1.2	1.1	0.9	0.9	1.0	0.8	1.0	0.9	0.7	0.8	0.6	0.6	0.6	0.7	0.8	0.7	0.5	0.5	0.4	1.0	24	1.5	0.4	0.9	0	0
10	0.8	1.2	0.9	1.0	1.0	0.7	2.5	23.2	4.4	2.7	2.1	1.8	1.7	1.6	1.0	1.6	1.6	1.0	0.9	0.8	0.5	0.3	0.3	0.3	24	23.2	0.3	2.3	0	0
11	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.5	0.5	0.3	1.9	1.3	1.3	1.3	24	1.9	0.1	0.4	0	0
12	1.3	1.3	2.9	0.9	0.6	0.3	0.9	1.6	1.9	1.1	1.3	1.8	2.0	2.2	1.8	1.5	1.2	0.9	1.0	1.1	1.3	4.3	4.9	4.1	24	4.9	0.3	1.8	0	0
13	2.3	1.1	0.2	0.3	0.7	3.1	2.0	0.3	0.3	0.3	1.2	0.9	0.2	0.1	0.1	0.2	0.2	1.0	1.0	2.1	1.9	2.7	1.6	1.5	24	3.1	0.1	1.1	0	0
14	1.1	0.9	1.4	1.3	1.7	2.5	3.3	3.0	2.5	2.9	2.8	2.8	2.6	2.1	1.8	1.2	0.9	0.9	1.7	0.9	1.5	3.6	4.3	2.9	24	4.3	0.9	2.1	0	0
15	2.3	2.9	4.1	1.8	14.4	15.2	28.1	29.2	29.1	59.1	33.5	5.8	36.0	57.7	47.5	47.7	65.8	28.4	13.9	8.2	5.2	3.9	4.5	16.6	24	65.8	1.8	23.4	0	0
16	12.9	4.0	3.1	1.6	1.3	1.9	2.2	1.7	1.4	1.7	1.7	1.4	1.6	1.2	0.9	0.9	0.8	0.4	0.2	0.2	0.1	0.2	0.2	0.2	24	12.9	0.1	1.7	0	0
17	0.2	0.2	0.2	0.4	0.6	1.8	1.6	0.8	2.2	2.0	2.1	1.3	1.5	2.0	1.7	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	24	2.2	0.2	0.9	0	0
18	0.2	0.3	0.7	0.2	0.1	0.1	0.0	0.0	1.2	0.6	1.0	0.9	0.9	0.3	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	24	1.2	0.0	0.3	0	0
19	2.0	4.0	6.3	6.0	1.8	0.3	0.5	1.4	1.1	0.4	0.0	0.0	0.0	0.3	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	6.3	0.0	1.1	0	0
20	0.2	0.0	0.0	0.0	0.0	1.6	1.3	0.0	0.0	0.3	1.5	0.9	0.3	0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.6	0.0	0.3	0	0
21	0.0	0.0	0.0	0.3	0.1	0.0	0.2	0.3	0.2	2.2	5.2	2.8	1.9	1.2	0.7	6.1	1.6	0.0	0.0	0.3	0.0	0.0	0.0	0.0	24	6.1	0.0	1.0	0	0
22	0.0	3.0	3.7	4.5	1.2	3.4	0.9	0.0	1.6	0.4	2.3	2.8	4.8	10.9	21.9	14.0	6.0	3.1	0.7	0.6	0.3	0.3	0.0	0.0	24	21.9	0.0	3.6	0	0
23	2.5	5.6	9.6	5.1	3.6	8.9	14.6	8.9	6.9	11.2	7.8	3.0	0.4	0.5	0.2	1.1	0.9	0.3	0.1	0.0	0.0	0.0	0.0	1.8	24	14.6	0.0	3.9	0	0
24	0.7	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.3	0.6	1.0	0.9	1.0	5.8	4.8	4.7	4.8	3.8	3.6	2.9	2.3	2.5	1.5	1.2	24	5.8	0.0	1.8	0	0
25	1.0	1.2	2.2	1.9	3.9	3.3	1.7	1.7	1.7	2.4	3.6	5.1	4.4	3.3	2.9	2.6	3.0	2.7	2.3	2.3	2.3	2.0	2.4	3.8	24	5.1	1.0	2.6	0	0
26	4.4	3.3	1.1	1.0	1.6	1.0	0.9	0.9	0.8	0.7	0.7	0.8	0.7	0.8	1.2	1.1	0.9	0.8	0.6	0.5	0.3	0.4	0.7	0.3	24	4.4	0.3	1.1	0	0
27	0.4	0.8	0.9	0.9	1.9	3.6	2.1	2.3	2.1	2.4	2.3	0.8	0.2	0.0	0.4	0.1	0.0	0.2	0.2	0.2	0.2	0.5	0.3	1.0	24	3.6	0.0	1.0	0	0
28	0.8	0.6	0.5	0.7	1.6	1.1	0.9	0.8	0.8	0.8	0.9	1.0	1.3	1.7	2.0	2.6	2.0	1.8	1.8	1.9	2.1	2.3	2.2	2.2	24	2.6	0.5	1.4	0	0
29	2.5	1.7	1.6	1.3	1.6	3.4	2.9	C	C	C	C	5.7	5.9	5.1	4.6	4.1	3.7	3.6	3.3	3.3	3.2	3.3	3.4	3.6	20	5.9	1.3	3.4	0	0
30	4.2	3.5	3.0	2.8	9.1	7.3	3.2	3.1	3.4	3.1	3.4	3.9	3.6	3.4	3.7	3.0	2.8	3.0	3.0	2.8	3.0	2.7	2.5	3.2	24	9.1	2.5	3.6	0	0
31	8.3	7.5	6.6	10.3	7.1	9.9	5.7	7.6	4.0	3.7	4.7	5.9	5.2	6.1	5.0	3.5	3.3	3.4	2.4	2.3	2.1	2.3	2.1	1.7	24	10.3	1.7	5.0	0	0
Count	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	30	30.8		
Maximum	12.9	7.5	9.6	10.3	14.4	15.2	28.1	29.2	29.1	59.1	36.8	37.3	63.8	68.0	72.0	47.7	65.8	28.4	32.6	15.0	12.7	15.6	9.1	16.6	24	72.0	7.5	30.7		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	0.8	0.0	0.0		
Average	2.3	2.0	2.2	2.2	2.7	3.0	3.3	3.9	3.1	4.3	4.8	3.7	5.3	6.6	6.4	5.2	4.2	2.4	2.7	2.0	2.0	2.1	1.7	2.5	24	12	1	3		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													72.0
													23.4
Data	0.1	0.2	0.6	0.9	1.3	2.0	2.9	3.9	6.2	11.2	46.7	72.0	3.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO2 - COURTICE
February 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	1.7	1.8	1.8	1.9	1.8	1.7	1.9	1.3	1.5	1.3	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.5	0.4	0.4	0.3	0.3	0.3	1.3	24	1.9	0.3	1.1	0	0
2	0.3	0.2	0.8	0.3	0.3	1.9	0.7	4.1	0.8	1.3	1.4	5.9	21.6	2.7	1.5	1.2	0.9	3.5	3.3	6.0	3.7	4.2	34.0	13.2	24	34.0	0.2	4.7	0	0
3	3.8	1.8	1.6	1.6	1.6	1.4	1.0	1.1	3.1	1.7	1.7	A	A	A	1.5	1.4	1.4	1.5	1.5	1.1	1.2	0.8	0.9	0.8	21	3.8	0.8	1.5	0	0
4	0.8	0.8	1.0	0.9	1.2	0.9	0.7	0.7	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.6	0.9	0.9	0.8	1.3	0.3	1.7	24	1.7	0.0	0.6	0	0
5	5.3	6.6	0.8	0.3	2.3	7.2	1.4	14.4	1.0	4.5	2.6	1.0	0.3	0.4	0.1	0.4	0.2	0.1	0.1	0.1	0.1	0.6	2.2	3.0	24	14.4	0.1	2.3	0	0
6	2.6	1.7	3.3	4.1	3.3	2.5	2.1	1.8	1.2	1.2	0.6	0.2	0.2	0.3	0.9	1.4	0.6	1.5	3.2	2.3	1.6	2.0	1.5	1.6	24	4.1	0.2	1.7	0	0
7	1.6	1.6	2.0	2.1	2.3	2.3	15.2	17.6	5.9	6.3	3.7	2.5	2.6	2.2	1.6	1.6	2.1	2.5	6.5	1.7	9.9	36.2	14.0	15.6	24	36.2	1.6	6.7	0	0
8	18.2	37.4	41.3	37.9	31.3	45.0	39.8	46.3	54.4	57.6	63.6	35.1	35.0	38.1	31.5	36.9	46.2	49.3	11.3	10.1	20.9	48.7	16.4	19.5	24	63.6	10.1	36.3	0	0
9	22.6	4.0	6.7	2.5	2.2	2.0	1.9	1.8	1.9	2.4	4.2	6.5	16.4	24.1	24.3	5.1	3.0	3.9	11.1	27.3	8.2	7.7	7.0	12.7	24	27.3	1.8	8.7	0	0
10	9.3	17.9	4.6	3.0	2.3	1.7	1.6	1.5	1.1	1.4	1.4	0.6	1.0	1.0	1.6	1.6	1.4	1.6	2.0	3.3	2.1	1.1	1.3	0.8	24	17.9	0.6	2.7	0	0
11	0.2	0.2	1.4	0.3	0.2	0.1	0.0	0.1	0.0	0.1	0.1	0.3	1.0	1.5	2.5	5.5	5.9	3.1	1.5	0.3	0.1	0.0	0.0	0.9	24	5.9	0.0	1.1	0	0
12	0.8	1.6	1.6	3.6	5.7	2.3	1.7	2.8	1.3	1.0	0.7	M	M	M	M	M	M	M	M	M	M	M	M	M	11	5.7	0.7		0	0
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
16	M	M	M	M	M	M	M	M	M	M	M	M	1.7	1.6	1.7	1.7	1.5	0.9	0.8	0.7	0.7	0.5	0.5	0.8	12	1.7	0.5		0	0
17	1.2	0.9	0.8	0.9	1.1	0.6	0.5	0.9	0.9	0.8	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.2	0.1	0.2	0.1	24	1.2	0.0	0.4	0	0
18	0.1	0.8	0.8	1.0	1.1	0.0	0.0	0.4	1.1	2.9	6.2	8.6	3.8	1.0	0.8	1.1	1.4	1.0	0.9	0.7	1.7	2.9	1.0	1.0	24	8.6	0.0	1.7	0	0
19	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.9	1.0	1.1	1.6	1.6	1.7	1.9	1.7	1.7	1.6	1.8	2.0	2.2	3.7	2.8	2.2	24	3.7	0.5	1.5	0	0
20	1.7	1.9	1.9	1.6	1.6	1.6	1.6	1.8	2.0	1.9	1.9	2.3	2.7	2.7	2.5	2.2	2.2	1.9	1.6	1.7	1.7	1.6	1.5	1.5	24	2.7	1.5	1.9	0	0
21	1.4	1.2	1.2	0.9	1.0	0.9	1.3	1.1	1.1	1.0	2.0	3.2	2.7	1.0	0.9	1.4	1.8	1.0	0.9	0.9	0.9	0.9	0.9	0.7	24	3.2	0.7	1.3	0	0
22	0.7	0.8	0.8	1.5	0.9	2.2	3.5	7.1	7.6	3.8	4.8	3.3	3.4	2.4	2.4	2.3	3.2	5.6	3.3	2.2	2.2	3.5	4.3	2.8	24	7.6	0.7	3.1	0	0
23	4.6	3.3	8.2	8.9	17.8	5.5	1.5	1.7	1.9	5.1	C	C	C	C	C	9.1	10.0	8.1	7.5	9.6	5.9	5.3	5.3	5.3	19	17.8	1.5	6.6	0	0
24	5.1	5.3	4.8	4.7	4.5	4.5	4.3	4.4	5.2	5.4	6.3	5.4	4.9	5.1	4.9	4.6	4.7	4.4	4.7	5.4	5.3	5.5	8.6	11.4	24	11.4	4.3	5.4	0	0
25	11.3	5.5	4.7	4.3	4.2	3.8	3.7	3.7	3.6	3.6	3.7	3.4	3.2	3.1	3.1	3.1	3.0	2.7	2.6	2.5	2.5	2.8	3.7	3.5	24	11.3	2.5	3.8	0	0
26	2.9	2.7	2.6	3.3	3.3	2.9	2.5	2.7	2.9	4.1	4.3	4.0	3.4	3.1	2.5	2.4	1.8	1.7	1.8	1.8	1.7	1.9	3.1	2.4	24	4.3	1.7	2.7	0	0
27	1.8	2.3	2.6	3.3	3.4	2.9	2.6	2.5	2.5	3.1	3.1	3.2	3.0	2.5	2.4	2.4	2.5	3.0	2.5	2.4	2.4	2.9	2.9	2.5	24	3.4	1.8	2.7	0	0
28	2.6	2.6	2.5	2.5	2.4	2.5	2.5	3.3	3.6	3.2	3.8	4.8	4.3	3.8	3.3	3.4	3.6	3.5	3.5	2.9	2.6	2.6	2.9	3.7	24	4.8	2.4	3.2	0	0
29	6.0	3.3	3.0	3.1	2.5	2.5	2.9	4.8	5.9	4.2	2.8	2.5	2.4	2.4	3.0	2.8	3.0	2.6	2.2	1.8	1.9	1.7	1.7	1.6	24	6.0	1.6	2.9	0	0
30																									0					
31																									0					
Count	25	25	25	25	25	25	25	25	25	25	24	22	23	23	24	25	25	25	25	25	25	25	25	25	591	25	22	24.6		
Maximum	22.6	37.4	41.3	37.9	31.3	45.0	39.8	46.3	54.4	57.6	63.6	35.1	35.0	38.1	31.5	36.9	46.2	49.3	11.3	27.3	20.9	48.7	34.0	19.5	24	63.6	11.3	38.0		
Minimum	0.1	0.2	0.8	0.3	0.2	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0	1.166356629	0.0			
Average	4.3	4.3	4.1	3.8	4.0	4.0	3.8	5.1	4.5	4.8	5.0	4.3	5.0	4.4	4.0	3.8	4.1	4.2	3.0	3.5	3.2	5.6	4.7	4.4	19	12	1	4.3		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													63.6
													36.3
Data	0.3	0.9	1.2	1.6	2.0	2.5	3.1	4.2	7.1	17.7	46.2	63.6	4.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO2 - COURTICE
March 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	1.5	1.4	8.0	21.5	20.6	24.7	23.3	6.9	2.5	2.3	3.9	2.8	2.4	5.4	2.5	2.3	2.6	2.7	3.9	5.6	5.3	4.3	6.8	11.9	24	24.7	1.4	7.3	0	0
2	2.8	2.5	2.4	2.2	2.3	2.2	1.7	1.9	1.9	1.9	1.9	2.1	2.2	2.2	2.2	2.2	2.5	2.6	2.6	2.5	2.4	3.2	1.9	1.6	24	3.2	1.6	2.3	0	0
3	2.3	2.5	2.5	5.1	2.9	9.5	22.7	3.4	4.9	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.6	10.6	18.6	20.1	20.3	13.1	24	22.7	1.8	6.6	0	0
4	17.1	9.3	15.3	7.4	4.5	19.1	28.6	28.3	4.7	2.4	2.3	2.1	1.8	1.7	1.7	1.7	1.7	1.7	1.7	2.1	4.5	11.5	9.5	4.8	24	28.6	1.7	7.7	0	0
5	6.1	4.2	4.7	8.3	10.1	3.2	2.4	2.5	3.9	3.4	1.9	1.8	1.8	1.9	2.0	1.9	1.7	1.8	2.4	3.2	5.7	4.8	2.0	2.6	24	10.1	1.7	3.5	0	0
6	1.8	1.9	1.8	1.8	1.8	1.7	1.8	2.7	2.4	2.4	2.4	2.5	2.5	2.9	2.9	2.8	3.6	2.8	2.5	2.4	2.5	2.5	2.6	2.9	24	3.6	1.7	2.4	0	0
7	2.1	2.5	2.3	2.5	2.3	2.2	2.4	2.8	3.0	2.9	3.1	3.2	3.4	3.7	4.1	4.1	5.5	6.5	9.1	9.8	8.7	5.3	7.9	4.3	24	9.8	2.1	4.3	0	0
8	7.4	6.5	14.7	7.1	4.2	3.7	3.6	3.4	3.7	3.6	3.6	3.4	3.6	3.1	3.2	3.1	3.1	2.9	2.9	3.7	3.8	4.3	5.6	4.6	24	14.7	2.9	4.5	0	0
9	7.4	4.5	5.5	4.8	14.1	11.6	18.6	8.0	5.6	5.7	7.1	6.4	5.8	4.8	3.3	2.9	3.0	3.0	3.0	3.3	2.8	3.1	2.9	5.4	24	18.6	2.8	5.9	0	0
10	4.7	3.0	3.1	11.2	4.5	3.7	3.0	3.8	4.0	3.0	3.0	3.7	2.9	3.0	2.9	2.7	2.4	2.4	2.4	2.4	2.4	2.2	2.4	2.0	24	11.2	2.0	3.4	0	0
11	2.2	2.1	2.0	2.0	2.8	3.1	3.8	3.3	3.2	2.8	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	3.8	0.0	1.4	0	0
12	0.0	3.0	0.0	0.1	0.0	2.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	4.2	0.0	0.4	0	0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.5	0.8	0.7	0.6	0.7	0.9	0.6	0.7	0.7	0.8	0.4	0.7	0.5	24	0.9	0.0	0.4	0	0
15	0.6	0.6	0.7	0.8	1.0	2.0	1.7	1.6	2.8	1.9	1.1	0.9	0.9	0.9	1.0	0.7	0.5	0.6	0.6	0.5	0.4	0.8	0.5	1.7	24	2.8	0.4	1.0	0	0
16	2.3	1.3	0.9	0.7	0.4	0.5	0.6	0.5	0.6	0.6	0.6	0.9	0.5	0.4	0.4	0.8	0.8	0.8	0.9	0.8	0.8	2.6	6.5	4.0	24	6.5	0.4	1.2	0	0
17	2.2	1.5	4.8	4.3	8.5	11.6	12.3	3.5	2.8	1.9	1.5	1.7	1.6	1.4	1.1	1.6	2.0	0.8	1.0	0.7	0.7	0.5	0.5	0.5	24	12.3	0.5	2.9	0	0
18	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	1.7	2.0	0.4	0.5	0.3	0.5	0.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.9	24	2.0	0.0	0.5	0	0
19	6.1	9.0	5.8	18.5	17.5	11.4	8.9	8.7	9.7	3.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	20.8	20.1	13.8	10.1	24	20.8	0.0	7.5	0	0
20	16.6	5.5	3.5	4.6	4.6	1.4	0.4	0.3	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	8.8	9.1	16.1	1.1	2.0	24	16.6	0.0	3.1	0	0
21	11.7	5.5	1.2	0.6	0.5	4.9	1.0	1.1	0.8	0.4	0.7	1.4	2.0	0.9	0.5	0.1	0.3	0.1	0.0	0.1	0.3	0.4	0.6	0.6	24	11.7	0.0	1.5	0	0
22	7.4	1.0	0.5	14.8	15.9	13.1	18.2	6.8	3.1	4.6	4.4	4.4	2.4	2.6	2.1	7.5	2.2	5.3	4.1	2.1	1.5	4.0	2.3	2.7	24	18.2	0.5	5.5	0	0
23	3.2	4.5	6.1	6.1	6.9	4.1	9.6	3.5	3.4	2.4	2.3	2.6	3.8	2.5	1.7	0.5	0.7	1.7	0.5	0.6	1.2	0.5	0.4	0.3	24	9.6	0.3	2.9	0	0
24	0.4	0.2	0.3	0.5	0.0	0.1	0.0	0.1	0.0	0.4	0.4	0.5	1.0	1.4	1.5	3.3	2.9	1.8	1.6	3.2	1.5	1.7	1.4	1.4	24	3.3	0.0	1.1	0	0
25	1.4	1.5	2.0	1.9	2.0	1.5	1.4	1.2	1.1	1.0	0.9	0.7	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.6	24.4	29.7	31.6	24	31.6	0.4	4.4	0	0
26	29.6	16.7	7.2	7.4	9.2	5.5	3.6	3.1	3.3	2.5	3.5	2.0	1.9	2.7	2.2	1.8	1.1	1.1	5.6	2.6	6.5	12.4	11.3	8.1	24	29.6	1.1	6.3	0	0
27	4.6	8.1	7.0	11.9	8.5	7.2	4.7	4.9	35.3	7.3	2.5	2.3	2.3	5.5	9.6	2.3	2.3	17.5	31.8	22.0	19.1	19.5	11.3	4.6	24	35.3	2.3	10.5	0	0
28	3.1	9.2	4.0	2.9	3.2	3.1	2.4	1.9	1.8	1.4	1.5	1.6	1.4	1.8	1.6	1.6	1.3	1.2	1.2	1.2	1.1	1.3	1.2	1.1	24	9.2	1.1	2.2	0	0
29	1.1	0.5	0.6	0.5	0.5	0.5	0.7	0.7	0.5	0.6	0.7	0.8	0.8	1.3	0.9	1.2	0.6	0.6	0.9	1.0	0.9	1.7	0.6	2.0	24	2.0	0.5	0.8	0	0
30	16.2	16.6	5.6	23.2	26.8	12.9	12.2	3.0	3.2	3.7	2.6	2.1	2.4	1.9	1.9	1.8	1.8	2.0	2.1	2.0	1.9	1.9	6.2	8.6	24	26.8	1.8	6.8	0	0
31	13.1	18.2	2.8	1.9	9.0	3.1	2.1	1.9	1.9	1.9	1.8	1.7	1.8	1.8	1.8	1.9	1.8	1.8	1.8	3.4	2.4	2.5	1.9	1.9	24	18.2	1.7	3.5	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	740	31	30	30.8		
Maximum	29.6	18.2	15.3	23.2	26.8	24.7	28.6	28.3	35.3	7.3	7.1	6.4	5.8	5.5	9.6	7.5	5.5	17.5	31.8	22.0	20.8	24.4	29.7	31.6	24	35.3	5.5	19.3		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	0.0	0.0	0.0		
Average	5.7	4.6	3.7	5.6	6.0	5.5	6.2	3.6	3.6	2.2	2.0	1.8	1.8	2.0	1.8	1.7	1.6	2.1	2.8	3.5	4.1	5.5	4.9	4.4	24	13	1	3.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													35.3
													10.5
Data	0.0	0.5	0.9	1.7	2.0	2.5	3.2	4.6	9.0	15.4	26.0	35.3	3.6

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

SO2 - Rundle Road
January 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.3	0.3	0.8	0.8	0.5	0.4	0.4	0.6	0.4	0.9	1.0	0.4	0.5	0.8	0.7	0.6	0.5	0.6	0.6	0.4	0.3	0.5	0.5	0.4	24	1.0	0.3	0.6	0	0
2	0.4	0.4	0.3	0.3	0.1	0.4	0.6	0.6	0.7	0.9	1.1	1.1	0.8	0.8	0.8	0.8	0.5	0.5	1.0	1.9	1.2	1.7	1.8	0.9	24	1.9	0.1	0.8	0	0
3	1.7	1.2	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	0.9	0.6	0.5	0.7	0.4	0.5	0.4	0.2	0.1	0.4	0.0	0.0	0.3	24	1.7	0.0	0.8	0	0
4	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.2	0.0	0.0	0	0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.6	4.2	4.6	5.3	9.0	3.9	3.3	2.1	1.9	1.7	2.0	2.8	2.8	1.9	24	9.0	0.0	2.1	0	0
6	2.0	2.9	2.5	2.7	3.3	2.5	2.9	4.9	4.7	6.6	12.0	11.7	10.9	12.9	9.5	6.4	5.7	6.2	5.6	4.5	5.1	4.4	4.8	4.0	24	12.9	2.0	5.8	0	0
7	3.2	2.7	2.1	1.3	1.0	0.7	0.5	0.6	1.2	2.1	3.1	4.5	5.6	5.3	5.8	9.4	5.9	1.6	0.7	1.1	0.9	0.9	0.8	0.7	24	9.4	0.5	2.6	0	0
8	1.0	1.2	1.1	1.2	1.3	1.2	1.6	2.1	2.4	3.0	2.6	2.5	2.7	3.1	2.6	2.1	2.0	4.5	3.7	8.5	3.9	2.8	1.9	1.3	24	8.5	1.0	2.5	0	0
9	2.1	1.3	1.1	0.8	0.5	0.7	1.7	2.2	0.8	1.0	1.2	1.2	1.0	1.1	1.1	1.1	1.1	1.2	1.0	0.8	0.8	0.8	0.5	1.1	24	2.2	0.5	1.1	0	0
10	0.6	1.2	1.4	0.9	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.1	4.6	2.5	1.3	2.0	1.3	1.4	1.1	1.2	1.0	0.7	0.8	0.7	24	4.6	0.6	1.3	0	0
11	0.0	0.0	0.6	0.8	0.9	0.7	1.0	0.8	0.9	1.1	0.8	0.8	0.6	0.6	0.5	0.3	0.0	0.5	0.5	1.2	1.0	1.2	0.9	0.9	24	1.2	0.0	0.7	0	0
12	1.3	0.9	0.9	1.9	1.0	0.0	1.0	2.1	1.8	2.1	2.0	1.8	1.8	2.5	2.2	1.3	1.6	1.5	1.0	1.2	1.3	2.4	4.6	3.6	24	4.6	0.0	1.7	0	0
13	2.6	1.8	1.2	0.8	0.9	2.9	2.1	1.0	0.5	0.6	1.2	1.4	0.7	1.1	0.9	1.2	1.1	0.8	1.2	1.4	2.2	2.1	1.8	1.4	24	2.9	0.5	1.4	0	0
14	1.3	1.3	1.4	1.2	1.6	2.1	1.8	2.3	2.3	3.0	3.5	3.4	3.2	2.7	2.3	2.0	1.8	1.2	1.1	1.1	0.8	0.7	0.9	1.0	24	3.5	0.7	1.8	0	0
15	0.8	1.2	1.1	0.8	0.9	0.6	1.0	0.8	0.9	1.3	1.2	1.2	1.1	1.2	1.4	1.6	1.6	1.4	1.4	1.2	1.2	1.2	2.0	1.6	24	2.0	0.6	1.2	0	0
16	3.0	2.7	2.4	1.7	1.3	1.8	1.5	1.2	1.4	1.2	1.2	1.2	1.6	1.8	1.3	1.1	1.1	0.9	0.5	0.4	0.5	0.5	0.4	0.0	24	3.0	0.0	1.3	0	0
17	0.4	0.5	0.7	0.7	1.0	1.8	1.6	1.1	1.5	2.1	2.0	1.8	1.5	2.0	1.4	1.1	0.8	0.9	0.7	0.5	0.5	0.5	0.7	0.7	24	2.1	0.4	1.1	0	0
18	0.5	0.4	1.0	0.5	0.3	0.5	0.4	0.4	0.4	0.9	1.8	2.0	1.5	1.1	1.0	0.6	0.5	0.5	0.5	0.4	0.5	0.8	0.5	0.5	24	2.0	0.3	0.7	0	0
19	1.6	3.3	5.9	4.9	2.5	1.3	1.1	1.4	1.9	1.5	1.2	1.3	1.1	1.0	0.9	0.8	0.6	0.6	0.4	0.4	0.4	0.5	0.5	0.4	24	5.9	0.4	1.5	0	0
20	0.4	0.4	0.1	0.0	0.1	0.2	0.1	0.0	0.2	0.1	0.2	0.4	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.5	0.3	0.3	0.3	24	0.6	0.0	0.3	0	0
21	0.4	0.1	0.2	0.4	0.3	0.3	0.3	0.4	0.7	1.9	3.7	1.8	1.2	1.2	1.1	1.0	0.7	0.8	0.6	0.9	0.8	0.7	0.7	0.5	24	3.7	0.1	0.9	0	0
22	0.6	0.6	0.5	0.5	0.6	0.2	0.4	0.4	0.5	0.8	1.0	7.4	15.5	10.9	15.7	8.8	5.2	2.2	1.2	1.1	0.7	0.7	0.9	0.9	24	15.7	0.2	3.2	0	0
23	0.9	0.9	0.5	0.7	0.8	0.8	0.7	0.6	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.1	1.1	1.1	1.2	1.1	1.1	1.0	1.0	24	1.3	0.5	1.0	0	0
24	1.1	1.1	1.1	1.0	1.0	1.0	0.9	1.0	1.0	1.3	1.7	1.8	1.9	3.2	5.2	4.3	4.5	4.0	3.7	3.3	2.5	1.9	1.9	2.2	24	5.2	0.9	2.2	0	0
25	1.9	2.6	1.9	1.4	1.2	1.6	1.8	2.0	2.7	3.0	4.3	5.5	5.7	4.9	4.1	4.3	4.1	3.6	3.1	2.6	2.6	2.3	3.0	5.0	24	5.7	1.2	3.1	0	0
26	5.9	5.6	2.4	2.1	2.1	2.0	2.0	1.8	1.8	1.9	1.9	2.1	1.8	2.0	2.3	2.3	2.0	1.9	2.1	2.0	1.8	1.9	1.4	1.7	24	5.9	1.4	2.3	0	0
27	1.3	1.7	1.8	1.9	2.0	3.5	2.4	2.8	2.8	3.1	3.5	2.8	2.0	1.7	1.8	1.5	1.2	1.3	1.3	1.5	1.5	1.9	1.9	2.4	24	3.5	1.2	2.1	0	0
28	2.3	2.5	2.2	2.2	2.5	2.1	2.1	2.0	2.0	1.9	1.9	2.0	2.4	2.7	3.0	3.3	2.5	2.4	2.4	2.5	2.7	2.7	2.4	2.2	24	3.3	1.9	2.4	0	0
29	2.2	2.0	1.9	1.9	2.0	3.4	3.3	3.1	2.8	1.9	1.8	2.5	C	C	C	C	C	C	2.3	2.2	2.1	2.2	0.8	1.8	18	3.4	0.8	2.2	0	0
30	1.5	0.9	0.6	0.8	0.6	0.6	1.1	0.9	1.6	1.2	1.6	2.7	2.1	1.9	2.1	1.4	1.0	0.6	0.7	1.3	0.9	0.5	0.4	0.0	24	2.7	0.0	1.1	0	0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.2	3.8	3.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	3.8	0.0	0.5	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	31	31	31	31	31	31	738	31	30	30.8		
Maximum	5.9	5.6	5.9	4.9	3.3	3.5	3.3	4.9	4.7	6.6	12.0	11.7	15.5	12.9	15.7	9.4	5.9	6.2	5.6	8.5	5.1	4.4	4.8	5.0	24	15.7	3.3	7.1		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18	0.2	0.0	0.0		
Average	1.3	1.3	1.3	1.1	1.0	1.1	1.2	1.3	1.3	1.6	2.1	2.4	2.7	2.7	2.8	2.2	1.8	1.5	1.4	1.5	1.3	1.3	1.3	1.3	24	4	1	2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													15.7
													5.8
Data	0.2	0.5	0.7	1.0	1.1	1.4	1.9	2.2	3.2	4.7	9.5	15.7	1.6

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

SO2 - Rundle Road
February 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	1.4	1.7	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	7.7	0.0	0.5	0	0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	A	A	0.5	0.4	0.5	0.4	0.2	0.0	0.0	0.0	22	0.7	0.0	0.1	0	0
4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.4	0.3	0.6	0.5	0.4	0.3	24	0.6	0.0	0.3	0	0
5	0.3	0.6	0.5	0.4	0.5	0.4	0.5	0.6	0.6	0.5	0.6	0.4	0.6	0.5	0.5	0.6	0.6	0.6	0.3	0.6	0.5	0.8	1.3	2.1	24	2.1	0.3	0.6	0	0
6	2.0	1.4	1.9	3.3	2.8	2.1	1.9	1.3	1.0	1.3	1.2	1.2	1.1	1.1	1.7	1.9	1.3	1.4	2.8	2.6	1.7	1.9	1.6	2.0	24	3.3	1.0	1.8	0	0
7	1.5	1.8	1.4	1.4	1.4	1.4	0.9	0.8	1.3	2.4	3.2	3.2	2.6	5.0	11.8	2.4	2.4	1.9	1.5	1.3	1.7	1.3	1.3	1.4	24	11.8	0.8	2.3	0	0
8	1.0	1.1	0.8	1.0	1.1	0.8	0.9	1.1	1.1	1.2	1.3	1.2	1.5	1.5	1.3	1.2	1.3	1.2	1.1	1.4	1.0	1.3	1.1	1.0	24	1.5	0.8	1.1	0	0
9	0.9	1.0	1.0	0.7	0.3	1.1	1.0	0.9	1.1	1.1	0.9	1.2	1.2	1.2	1.3	1.2	5.8	7.0	7.1	7.7	7.8	8.4	8.6	8.1	24	8.6	0.3	3.2	0	0
10	8.1	8.1	8.0	7.9	7.8	7.8	7.3	6.6	7.0	6.7	6.5	6.8	7.0	6.8	7.4	8.1	8.2	8.1	8.2	9.3	9.0	8.3	8.0	7.5	24	9.3	6.5	7.7	0	0
11	7.1	6.9	7.7	6.8	6.5	6.2	6.1	6.1	6.0	5.7	5.7	5.6	6.4	6.9	7.9	11.1	10.9	8.7	6.7	5.8	5.5	5.3	5.3	6.0	24	11.1	5.3	6.8	0	0
12	6.0	6.1	6.3	6.8	8.9	7.9	7.6	7.1	8.1	7.2	7.3	8.4	7.7	6.9	6.8	7.6	6.9	6.0	5.7	5.8	5.7	5.9	5.8	6.1	24	8.9	5.7	6.9	0	0
13	6.2	6.0	6.1	5.8	5.4	5.4	5.4	5.5	5.3	5.0	5.0	4.8	5.4	6.4	7.4	7.3	6.4	6.2	5.6	5.3	5.4	4.7	4.6	4.7	24	7.4	4.6	5.6	0	0
14	4.8	4.7	4.7	4.7	4.8	4.7	4.6	4.6	4.6	4.6	4.7	6.2	12.1	8.3	6.9	6.2	5.8	5.7	4.9	4.8	4.8	4.8	5.2	4.8	24	12.1	4.6	5.5	0	0
15	4.5	5.0	5.0	4.7	4.8	4.9	5.4	8.2	6.0	8.5	9.9	7.1	6.3	5.8	5.2	5.0	5.0	5.0	5.0	5.2	5.0	5.7	5.4	5.5	24	9.9	4.5	5.8	0	0
16	5.5	5.3	5.0	4.9	5.0	5.1	5.0	4.9	5.0	4.9	5.1	5.1	5.3	5.4	5.4	5.3	5.1	5.0	4.9	4.9	4.9	5.0	5.0	4.8	24	5.5	4.8	5.1	0	0
17	5.2	5.5	5.0	4.9	5.0	5.0	4.8	4.6	5.0	5.0	4.9	4.7	4.8	4.6	4.6	4.5	4.4	4.2	4.2	4.4	4.4	4.3	4.3	4.1	24	5.5	4.1	4.7	0	0
18	4.2	4.4	4.0	4.0	4.0	3.8	4.0	7.0	5.9	5.0	8.7	30.4	42.8	7.5	5.9	0.0	6.6	4.6	4.9	5.1	5.1	5.1	5.0	4.9	24	42.8	0.0	7.6	0	0
19	4.9	4.8	4.8	4.9	4.8	5.1	4.8	4.8	9.7	8.6	8.6	6.5	7.1	14.1	6.7	5.9	6.3	5.7	5.8	5.8	5.8	5.8	6.0	6.1	24	14.1	4.8	6.4	0	0
20	5.8	5.1	5.5	5.2	5.2	5.2	5.3	5.3	5.5	5.7	5.7	5.8	6.0	6.3	6.2	5.9	5.8	5.3	5.2	5.2	5.0	4.7	4.5	4.1	24	6.3	4.1	5.4	0	0
21	4.6	4.8	4.6	4.7	4.9	4.9	4.6	4.6	4.7	4.5	4.6	5.6	5.6	5.2	5.0	5.1	5.2	4.8	4.7	4.6	4.6	4.6	4.7	4.7	24	5.6	4.5	4.8	0	0
22	4.7	4.5	4.5	4.7	4.7	4.7	4.8	4.8	5.9	6.2	6.5	12.9	7.4	6.5	6.3	9.3	11.5	7.2	6.6	5.3	4.8	4.8	4.6	5.2	24	12.9	4.5	6.2	0	0
23	5.0	4.8	4.7	4.8	4.8	4.7	4.8	C	C	C	3.9	3.8	4.2	5.1	9.3	10.0	3.5	2.6	2.4	2.0	2.1	1.8	0.0	2.3	21	10.0	0.0	4.1	0	0
24	2.7	2.8	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2	1.8	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	1.9	24	2.8	1.8	2.0	0	0
25	1.8	1.9	1.5	1.4	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.2	1.1	0.9	0.9	1.1	0.8	0.6	0.7	0.6	0.6	0.7	0.9	0.8	24	1.9	0.6	1.1	0	0
26	0.6	0.3	0.5	0.8	0.8	0.5	0.4	0.4	0.3	1.8	2.2	1.8	1.6	1.3	1.1	1.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.3	24	2.2	0.0	0.7	0	0
27	0.1	0.7	0.5	0.7	1.3	0.7	0.6	0.8	0.7	1.3	1.6	1.8	1.8	1.4	1.0	0.9	0.8	1.1	0.7	0.5	0.6	0.6	0.6	0.5	24	1.8	0.1	0.9	0	0
28	0.5	0.5	0.6	0.6	0.6	0.8	0.5	1.0	1.3	1.1	1.6	2.9	2.9	2.6	2.3	2.0	1.8	1.6	1.3	0.8	0.9	0.9	0.5	0.5	24	2.9	0.5	1.3	0	0
29	0.8	0.9	0.7	0.9	0.8	0.5	0.7	1.5	2.3	1.6	0.8	0.5	0.7	0.7	1.2	1.1	0.9	0.4	0.1	0.0	0.0	0.0	0.0	0.0	24	2.3	0.0	0.7	0	0
30																									0					
31																									0					
Count	29	29	29	29	29	29	29	28	28	28	29	29	29	29	28	28	29	29	29	29	29	29	29	29	691	29	28	28.8		
Maximum	8.1	8.1	8.0	7.9	8.9	7.9	7.6	8.2	9.7	8.6	9.9	30.4	42.8	14.1	11.8	11.1	11.5	8.7	8.2	9.3	9.0	8.4	8.6	8.1	24	42.8	7.6	11.5		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0			
Average	3.1	3.1	3.0	3.0	3.1	3.0	2.9	3.1	3.3	3.3	3.6	4.5	5.3	4.0	4.2	3.9	3.8	3.4	3.2	3.2	3.1	3.1	3.0	3.1	22	7	2	3.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													42.8
													7.7
Data	0.0	0.6	1.0	1.5	2.6	4.7	5.0	5.8	6.9	8.1	11.1	42.8	3.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

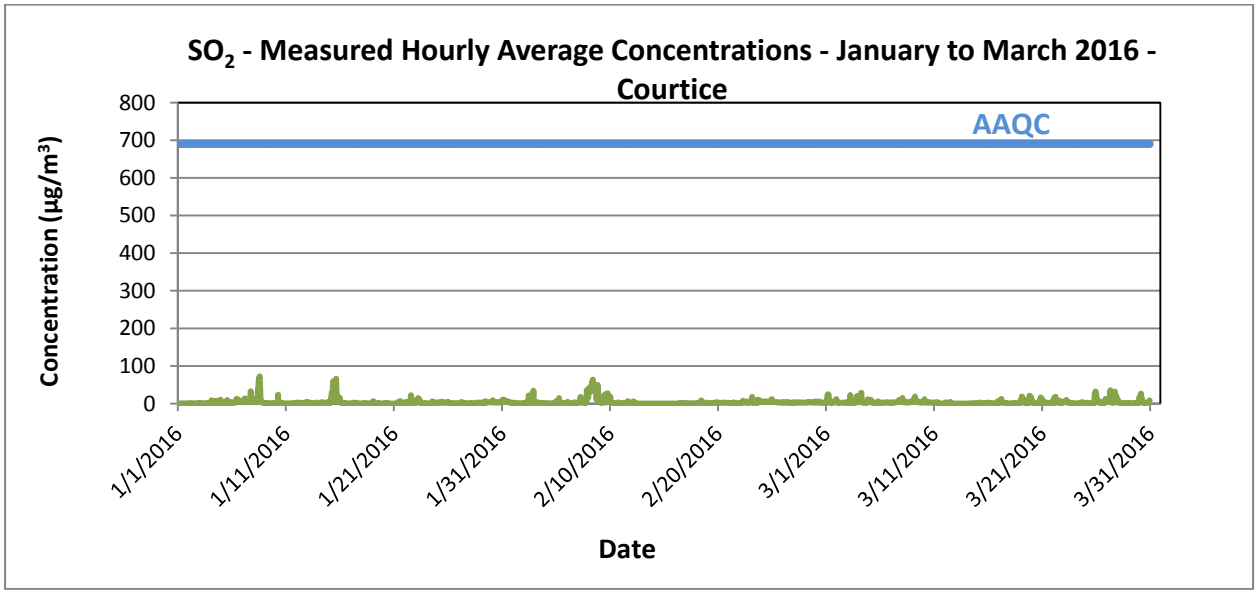
SO2 - Rundle Road March 2016 (µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>690	Days>275
1	0.0	0.0	0.0	0.7	0.9	0.3	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5	0.0	0.1	24	0.9	0.0	0.1	0	0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	24	0.3	0.0	0.0	0	0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	24	0.1	0.0	0.0	0	0
5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.7	0.7	0.5	0.5	0.4	0.0	0.5	0.5	0.3	0.2	0.3	0.2	0.2	0.0	0.0	0.0	24	0.7	0.0	0.2	0	0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.6	0.6	0.6	1.2	1.3	1.3	2.2	2.0	1.5	6.4	7.9	10.9	8.5	7.1	24	10.9	0.0	2.2	0	0
7	13.7	9.5	9.0	11.9	9.9	5.6	7.7	7.5	6.9	8.6	5.9	7.0	13.1	8.3	11.2	8.3	9.1	9.5	7.2	9.3	7.2	6.9	7.3	5.1	24	13.7	5.1	8.6	0	0
8	7.4	7.2	5.6	7.1	8.1	7.4	6.6	5.8	8.1	5.8	7.3	5.4	8.0	7.4	10.1	6.1	7.0	7.2	7.8	7.6	6.5	7.5	6.7	6.3	24	10.1	5.4	7.1	0	0
9	6.3	7.2	5.4	7.5	4.6	8.8	6.2	8.7	9.9	7.8	11.2	9.0	9.6	6.9	7.5	7.4	8.5	7.7	10.1	8.4	8.4	6.5	6.4	6.9	24	11.2	4.6	7.8	0	0
10	7.1	5.0	4.7	5.9	5.7	5.3	6.3	8.1	6.4	5.6	7.4	6.5	4.4	5.1	6.8	5.2	6.2	4.8	4.4	6.3	5.7	4.8	4.4	6.0	24	8.1	4.4	5.8	0	0
11	5.0	5.6	5.7	4.7	5.1	5.7	7.5	C	C	2.1	4.0	3.5	2.9	2.8	1.0	1.3	1.1	0.7	0.7	0.1	0.2	0.0	0.0	0.0	22	7.5	0.0	2.7	0	0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.3	5.1	7.2	4.4	2.7	1.2	0.7	0.0	0.0	0.0	0.0	0.0	24	7.2	0.0	1.0	0	0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	0.3	0.4	0.2	0.2	0.4	0.3	0.3	0.4	0.7	0.1	0.3	0.5	24	0.7	0.0	0.2	0	0
15	0.3	0.2	0.5	0.2	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.3	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.3	0.1	24	0.5	0.0	0.2	0	0
16	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.7	0.4	0.3	0.4	0.4	0.1	0.5	0.4	0.6	0.4	0.3	0.1	0.2	0.1	0.1	24	0.7	0.0	0.2	0	0
17	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.7	0.6	0.4	0.4	0.7	0.4	0.2	0.4	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	24	0.7	0.0	0.2	0	0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	0.0	0.0	0.0	0	0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	1.2	0.0	0.1	0	0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	1.7	2.3	2.3	0.7	0.9	0.8	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	24	2.3	0.0	0.5	0	0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.8	0.9	0.8	1.1	0.9	0.8	0.9	0.8	0.9	0.5	0.6	0.8	0.6	0.7	24	1.1	0.0	0.5	0	0
24	0.8	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.9	1.2	0.7	1.1	1.1	1.5	1.4	1.3	1.4	1.4	1.3	1.4	1.5	1.4	1.5	24	1.5	0.6	1.0	0	0
25	1.4	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.0	0.9	0.9	0.9	0.8	0.9	0.7	0.7	0.5	0.3	0.6	0.7	0.8	0.8	0.6	24	1.6	0.3	1.0	0	0
26	0.6	0.7	0.9	0.6	0.2	0.6	0.5	0.8	0.8	1.9	5.4	7.1	23.0	31.3	8.0	4.2	2.8	9.2	1.6	0.8	0.7	0.7	0.6	0.6	24	31.3	0.2	4.3	0	0
27	0.2	0.4	0.7	0.7	0.8	0.7	0.8	0.7	1.2	1.2	2.5	3.8	2.0	2.0	2.1	2.0	2.2	2.1	2.1	1.6	1.5	1.5	1.5	1.3	24	3.8	0.2	1.5	0	0
28	1.3	1.5	1.4	1.4	1.6	1.7	1.8	2.0	1.6	1.9	1.7	1.5	1.9	1.7	1.3	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.1	24	2.0	1.1	1.5	0	0
29	0.9	1.0	0.9	M	4.6	0.0	1.0	1.2	1.2	1.2	1.1	1.1	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	23	4.6	0.0	1.2	0	0
30	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.8	2.8	2.1	1.9	1.9	2.8	2.8	9.4	14.8	3.6	2.8	2.5	2.8	2.6	2.2	2.4	2.0	24	14.8	1.0	2.9	0	0
31	1.7	1.7	2.0	2.1	1.9	1.8	2.0	2.0	1.9	2.1	1.9	2.0	2.2	2.1	2.2	2.0	2.3	1.9	2.0	2.3	2.4	2.4	2.5	2.5	24	2.5	1.7	2.1	0	0
Count	31	31	31	30	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	741	31	30	30.9		
Maximum	13.7	9.5	9.0	11.9	9.9	8.8	7.7	8.7	9.9	8.6	11.2	9.0	23.0	31.3	11.2	14.8	9.1	9.5	10.1	9.3	8.4	10.9	8.5	7.1	24	31.3	7.1	11.3		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	0.0	0.0	0.0		
Average	1.5	1.4	1.3	1.5	1.5	1.3	1.4	1.4	1.5	1.5	1.9	1.8	2.6	2.7	2.4	2.1	1.8	1.8	1.5	1.7	1.6	1.6	1.5	1.4	24	5	1	1.7		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													31.3
													8.6
Data	0.0	0.0	0.0	0.1	0.4	0.8	1.3	2.2	6.5	7.8	11.0	31.3	1.7

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

Figure A-1 Time History Plots of Measured Hourly Average and 24-Hour Average SO_2 Concentrations– Courtice (WPCP) Station



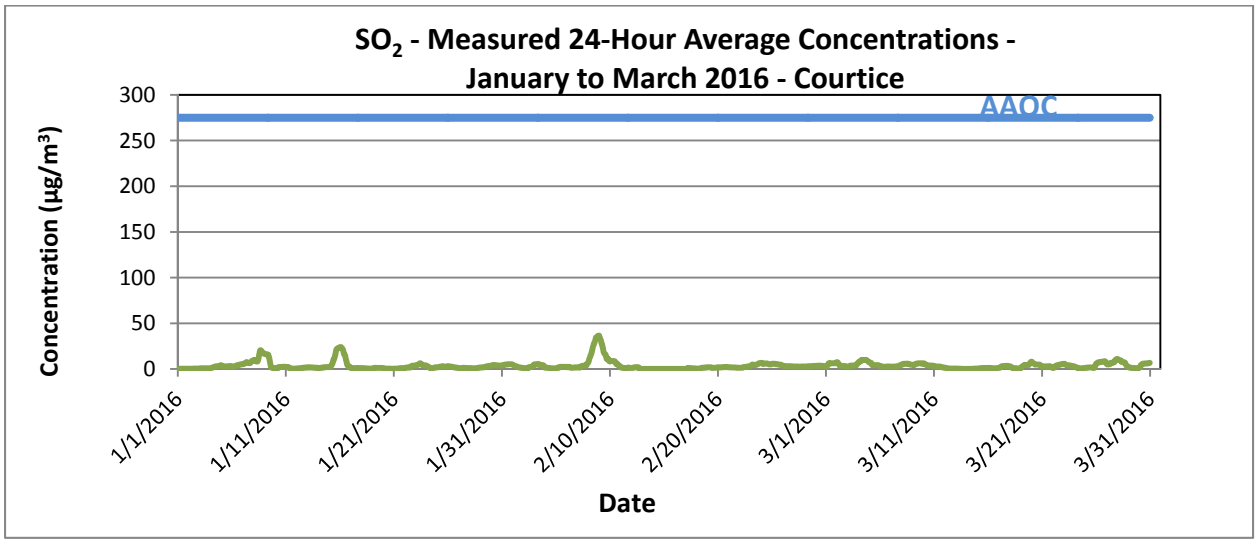
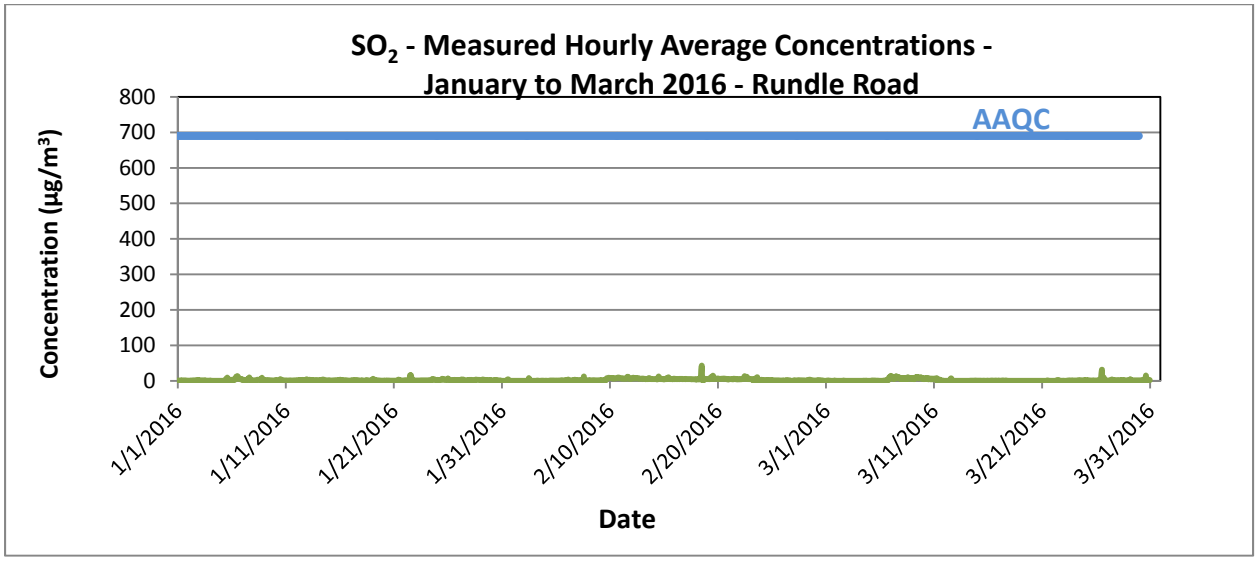
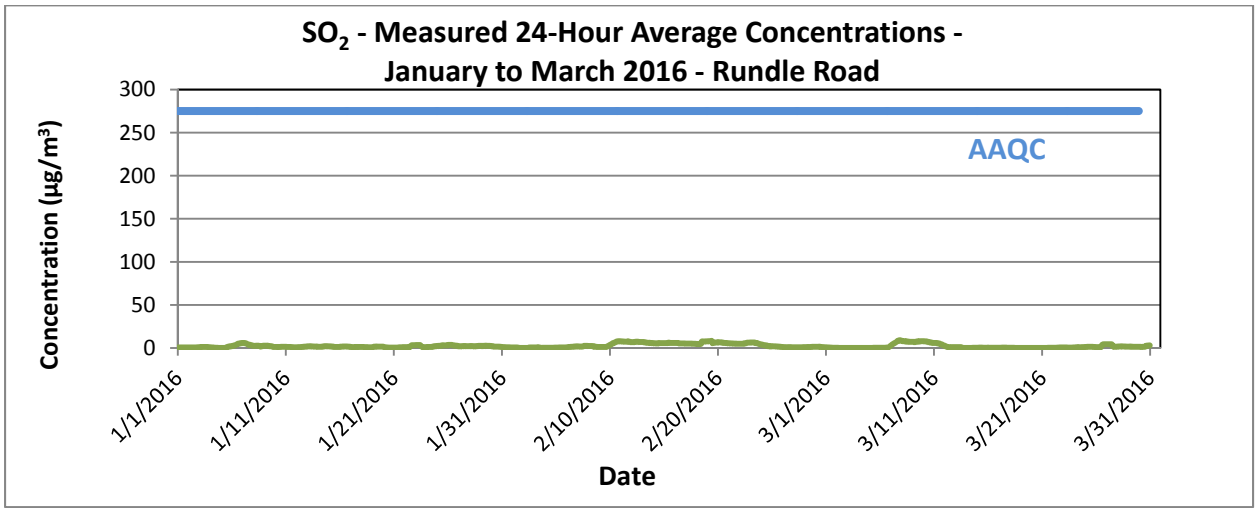


Figure A-2 Time History Plots of Measured Hourly Average and 24-Hour Average SO_2 Concentrations– Rundle Road Station





Appendix B NO_2 DATA SUMMARIES AND TIME HISTORY PLOTS

NO_2 - January ($\mu g/m^3$)	COURTICE 2016																												
Hour																													
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	11.8	7.6	8.3	6.9	6.9	6.7	6.0	5.0	4.9	6.2	9.2	5.6	3.7	4.7	7.4	9.5	7.0	9.3	9.3	13.1	11.6	13.9	14.5	16.9	24	16.9	3.7	8.6	0	0
2	11.9	9.8	12.2	11.3	10.6	14.3	15.8	4.6	4.2	9.4	12.4	10.6	7.7	7.0	7.2	8.2	9.9	8.9	6.3	7.2	6.2	4.8	4.5	3.6	24	15.8	3.6	8.7	0	0
3	6.5	7.0	7.1	7.7	8.1	8.0	6.8	6.5	8.0	10.2	13.1	11.0	4.6	2.4	2.0	2.0	2.4	4.1	3.8	3.5	3.8	3.3	2.3	2.8	24	13.1	2.0	5.7	0	0
4	1.2	2.2	3.0	2.8	1.9	2.9	3.1	4.0	2.9	3.8	3.4	1.6	1.7	1.9	2.6	3.7	4.3	12.7	19.4	34.6	35.3	40.5	32.5	19.4	24	40.5	1.2	10.1	0	0
5	34.8	33.3	26.1	28.9	29.6	39.1	33.3	44.6	42.1	33.5	44.2	64.2	27.0	13.1	17.8	10.7	12.8	8.2	6.0	4.1	4.7	7.4	7.5	38.6	24	64.2	4.1	25.5	0	0
6	7.9	11.2	14.3	37.9	55.1	55.4	56.1	55.4	46.2	36.9	13.5	15.7	14.5	15.2	11.7	10.4	12.5	16.4	17.4	16.7	16.6	14.1	13.1	43.8	24	56.1	7.9	25.3	0	0
7	63.4	66.3	63.7	62.2	60.3	58.0	51.0	56.7	49.3	46.6	45.6	37.1	26.3	23.7	22.9	22.7	29.3	40.1	59.6	61.7	55.9	52.4	47.0	45.5	24	66.3	22.7	47.8	0	0
8	41.2	28.8	27.8	22.1	25.7	31.7	33.3	31.2	32.7	31.3	38.7	34.5	35.8	36.8	41.6	35.0	32.7	25.2	26.1	25.1	22.7	15.3	13.5	12.6	24	41.6	12.6	29.2	0	0
9	10.1	8.5	7.4	8.9	8.9	9.4	10.8	13.5	12.5	12.4	9.6	9.0	8.0	8.4	8.4	8.0	8.4	7.9	9.0	10.2	9.4	11.0	12.1	14.9	24	14.9	7.4	9.9	0	0
10	8.9	9.1	6.3	5.0	10.3	5.6	8.8	23.0	3.6	4.9	4.4	3.7	3.5	3.5	3.5	11.7	6.6	2.9	4.4	4.3	3.7	2.9	3.4	3.2	24	23.0	2.9	6.1	0	0
11	2.2	1.6	2.5	2.8	3.0	4.0	5.6	6.5	7.6	8.6	7.8	4.9	4.4	4.5	4.8	5.6	8.5	12.8	18.2	17.8	33.2	54.2	70.6	59.4	24	70.6	1.6	14.6	0	0
12	39.5	30.4	29.5	10.0	4.3	3.5	2.8	4.3	6.1	7.3	8.0	4.2	4.6	8.5	15.6	14.5	12.8	12.2	10.0	22.4	12.6	14.0	8.3	6.7	24	39.5	2.8	12.2	0	0
13	11.6	9.9	9.1	8.4	9.8	14.4	21.3	47.9	37.7	28.3	31.6	23.2	10.6	9.3	7.3	10.0	15.6	15.7	20.1	20.6	17.4	36.9	35.7	26.0	24	47.9	7.3	19.9	0	0
14	29.7	15.2	17.3	29.6	24.5	31.4	36.3	43.4	42.6	48.9	37.4	30.5	29.9	22.9	24.7	19.8	19.1	25.4	57.8	22.0	35.5	47.8	34.4	29.6	24	57.8	15.2	31.5	0	0
15	19.3	18.9	20.5	17.2	22.2	20.8	28.9	31.7	34.4	35.1	24.6	12.9	25.8	33.7	33.4	40.5	45.8	35.9	24.1	27.1	21.8	27.6	28.5	43.2	24	45.8	12.9	28.1	0	0
16	33.8	21.5	20.0	7.2	5.4	6.8	10.4	13.0	15.4	12.3	6.3	6.4	3.8	2.9	3.3	4.7	4.7	3.3	5.0	3.9	8.6	8.6	5.9	4.0	24	33.8	2.9	9.1	0	0
17	5.0	5.7	7.9	3.6	0.8	1.7	4.7	2.2	4.6	7.4	5.1	3.3	2.9	5.0	11.4	7.6	5.8	6.6	5.8	7.5	6.1	11.3	10.1	12.5	24	12.5	0.8	6.0	0	0
18	11.0	11.1	5.0	5.0	6.1	14.2	18.3	23.7	23.2	12.8	5.6	6.2	5.1	5.3	3.0	3.9	8.6	11.2	19.5	20.1	21.4	25.6	35.8	27.2	24	35.8	3.0	13.7	0	0
19	18.8	7.6	5.6	5.9	6.1	11.1	17.1	22.4	28.5	26.2	12.3	8.2	5.1	7.1	7.3	8.7	11.0	6.7	9.5	8.9	9.2	10.2	10.5	10.8	24	28.5	5.1	11.5	0	0
20	6.9	10.1	8.4	5.8	11.8	7.7	14.1	17.0	31.0	30.3	35.4	22.1	12.0	21.9	32.0	23.9	16.6	16.1	22.7	32.9	33.4	25.0	22.1	21.2	24	35.4	5.8	20.0	0	0
21	31.2	18.0	12.1	13.6	13.3	20.5	17.1	19.4	20.5	8.7	5.8	4.0	3.4	2.1	2.7	3.3	7.5	16.4	38.0	28.4	38.9	33.6	21.4	30.9	24	38.9	2.1	17.1	0	0
22	24.8	22.3	9.0	14.9	20.8	21.0	22.1	30.6	28.6	24.2	11.3	9.7	5.5	6.6	13.8	10.5	6.7	11.5	19.3	23.0	40.7	25.5	13.3	13.5	24	40.7	5.5	17.9	0	0
23	11.0	8.3	4.7	2.8	3.4	3.1	4.5	6.2	9.7	6.0	3.2	2.9	2.9	1.5	2.2	3.8	3.1	16.8	18.7	23.0	15.4	30.2	16.0	7.0	24	30.2	1.5	8.6	0	0
24	5.3	8.4	4.6	8.0	18.7	18.4	30.8	33.7	37.8	28.3	22.3	15.9	4.8	6.5	10.2	13.1	13.5	25.5	47.2	54.8	52.2	66.2	30.4	17.9	24	66.2	4.6	23.9	0	0
25	27.4	56.7	58.5	57.1	55.0	52.1	35.2	8.3	7.8	9.1	12.9	18.6	15.5	9.0	6.9	7.0	8.1	9.1	9.1	9.0	12.6	9.8	9.9	11.0	24	58.5	6.9	21.5	0	0
26	11.4	8.9	5.7	5.8	5.9	4.7	4.7	4.4	5.0	5.7	4.6	4.6	7.3	11.2	14.0	13.6	14.2	12.8	13.5	12.1	10.6	10.6	13.5	15.2	24	15.2	4.4	9.2	0	0
27	12.7	12.1	11.9	13.0	13.1	4.7	7.5	9.2	11.1	10.4	5.4	4.2	3.7	3.2	4.1	4.2	3.7	7.9	10.0	7.9	3.0	1.6	2.0	3.4	24	13.1	1.6	7.1	0	0
28	4.2	3.3	2.7	3.4	3.4	4.8	5.2	5.4	4.7	4.8	4.9	5.7	6.9	7.1	7.7	8.4	9.1	9.9	10.4	10.5	10.1	12.2	16.5	25.3	24	25.3	2.7	7.8	0	0
29	36.2	32.7	28.0	14.4	9.1	5.9	4.2	C	C	C	C	C	3.4	4.0	4.0	3.9	5.5	8.1	7.5	9.5	14.6	12.3	16.4	17.7	19	36.2	3.4	12.5	0	0
30	16.9	25.9	33.6	31.8	38.7	28.2	4.3	5.9	6.0	6.0	7.0	6.6	7.4	8.8	9.3	7.9	8.1	8.9	12.1	18.9	20.1	13.9	13.7	52.1	24	52.1	4.3	16.3	0	0
31	54.6	42.0	34.8	33.9	32.2	28.0	30.9	31.5	27.4	24.8	23.0	27.1	25.2	18.3	15.5	14.1	33.3	36.8	30.3	32.0	9.2	6.1	4.7	4.0	24	54.6	4.0	25.8	0	0
Count	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	739	31	30	30.8		
Maximum	63.4	66.3	63.7	62.2	60.3	58.0	56.1	56.7	49.3	48.9	45.6	64.2	35.8	36.8	41.6	40.5	45.8	40.1	59.6	61.7	55.9	66.2	70.6	59.4	24	70.6	35.8	54.5		
Minimum	1.2	1.6	2.5	2.8	0.8	1.7	2.8	2.2	2.9	3.8	3.2	1.6	1.7	1.5	2.0	2.0	2.4	2.9	3.8	3.5	3.0	1.6	2.0	2.8	19	12.5	0.8	2.4		
Average	19.7	17.9	16.4	15.7	16.9	17.4	17.8	20.4	19.9	18.0	15.6	13.8	10.4	10.2	11.6	11.3	12.5	14.4	18.4	19.1	19.3	20.9	18.4	20.6	24	38	5	17		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													70.6
													47.8
Data	3.7	5.1	7.1	8.9	11.1	14.1	20.1	28.2	36.0	46.7	61.2	70.6	16.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - COURTICE
February 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	3.8	4.9	8.8	11.1	6.0	7.1	10.2	8.9	9.5	7.5	6.0	6.9	5.1	4.0	3.8	9.5	6.6	16.1	25.5	34.9	22.2	15.0	45.3	33.2	24	45.3	3.8	13.0	0	0
2	13.6	7.5	11.0	15.3	8.7	13.2	15.2	15.2	11.2	5.0	4.7	7.1	18.5	4.0	1.4	2.3	5.2	18.6	8.4	14.2	11.3	16.6	42.9	21.7	24	42.9	1.4	12.2	0	0
3	7.8	6.9	4.5	4.0	7.5	15.7	6.2	7.6	21.0	19.1	18.1	A	A	A	4.2	3.9	4.3	5.6	7.0	8.9	10.9	12.1	10.8	6.8	21	21.0	3.9	9.2	0	0
4	4.2	4.2	4.1	5.4	8.6	10.0	13.4	18.9	12.3	6.6	5.9	5.0	2.9	4.0	3.2	3.8	6.2	11.4	14.2	8.5	11.3	12.1	11.0	7.1	24	18.9	2.9	8.1	0	0
5	6.6	6.7	3.8	7.0	5.2	11.8	9.3	13.2	14.6	4.3	2.9	3.3	5.0	6.4	17.0	11.9	10.8	10.7	10.4	16.2	13.2	11.0	12.2	12.1	24	17.0	2.9	9.4	0	0
6	13.1	13.0	15.1	20.0	38.6	33.2	35.7	31.8	23.6	19.4	13.2	12.0	9.7	7.3	6.3	6.5	7.2	7.1	7.3	6.5	6.2	10.5	13.1	14.8	24	38.6	6.2	15.5	0	0
7	15.2	13.8	14.6	15.1	16.7	20.0	43.1	46.8	36.7	30.4	18.1	11.0	13.4	13.5	11.4	16.6	17.2	15.7	30.5	16.0	27.9	48.0	20.1	20.3	24	48.0	11.0	22.2	0	0
8	27.6	39.3	41.9	34.7	35.1	38.5	33.8	125.9	74.1	40.0	45.2	28.6	32.8	35.3	39.8	38.2	41.2	40.0	20.8	19.3	24.9	40.5	19.6	26.5	24	125.9	19.3	39.3	0	0
9	30.9	12.8	15.2	9.4	11.1	11.9	14.3	17.8	19.4	19.0	23.1	25.0	29.2	34.6	30.2	18.9	17.5	21.0	30.0	42.6	36.2	32.5	31.9	32.1	24	42.6	9.4	23.6	0	0
10	28.6	15.5	17.9	25.5	10.7	12.4	11.6	13.1	12.5	11.3	8.8	2.2	5.8	6.1	6.8	8.1	8.1	9.6	9.2	9.5	9.1	10.1	7.4	12.3	24	28.6	2.2	11.4	0	0
11	9.6	9.1	7.0	4.4	7.4	7.0	6.5	7.7	6.1	6.1	5.7	4.4	3.6	4.5	4.6	5.1	4.6	9.5	14.3	18.1	54.2	25.7	23.4	48.3	24	54.2	3.6	12.4	0	0
12	73.9	56.8	40.6	21.9	27.9	17.8	15.3	35.4	24.1	19.5	8.6	M	M	M	M	M	M	M	M	M	M	M	M	M	11	73.9	8.6		0	0
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
16	M	M	M	M	M	M	M	M	M	M	M	M	16.8	14.3	13.9	14.9	14.5	11.5	13.0	12.6	15.8	16.9	33.2	22.1	12	33.2	11.5		0	0
17	15.6	10.1	10.7	15.1	34.8	32.0	28.2	37.6	43.7	31.5	11.0	9.8	8.0	6.2	6.6	6.0	6.2	9.7	9.7	11.4	13.9	21.4	31.1	39.1	24	43.7	6.0	18.7	0	0
18	41.0	76.3	77.4	82.3	79.7	57.0	50.8	68.0	41.2	13.6	18.5	10.7	2.8	1.1	0.9	1.4	0.5	0.9	0.6	2.0	56.7	79.9	28.2	3.3	24	82.3	0.5	33.1	0	0
19	3.2	2.8	3.3	3.7	3.5	2.8	2.5	3.1	4.8	7.0	9.6	15.6	6.9	5.3	7.1	13.2	13.4	5.5	6.9	8.1	11.3	21.7	6.4	4.8	24	21.7	2.5	7.2	0	0
20	4.5	6.0	6.9	5.4	4.7	3.9	3.8	4.1	5.1	4.5	5.3	6.5	6.0	5.3	4.5	5.0	6.0	6.7	7.4	6.7	8.0	9.6	8.2	6.7	24	9.6	3.8	5.9	0	0
21	6.8	12.5	12.0	14.2	14.3	16.8	10.7	11.2	15.8	4.5	3.6	2.6	3.3	2.6	2.4	4.7	6.9	8.1	12.0	15.7	11.5	15.3	28.8	12.7	24	28.8	2.4	10.4	0	0
22	8.4	6.4	5.9	4.3	4.1	4.1	8.3	7.9	5.3	4.5	5.0	3.0	2.4	2.4	2.4	3.3	3.4	5.7	4.6	13.9	31.6	46.3	41.8	33.0	24	46.3	2.4	10.8	0	0
23	33.1	28.1	26.3	19.1	21.6	18.7	14.5	14.1	10.5	16.2	C	C	17.0	14.0	8.7	9.2	12.6	18.7	27.1	19.7	14.5	18.5	25.3	16.6	22	33.1	8.7	18.4	0	0
24	18.8	13.3	12.6	11.3	14.5	12.2	15.5	16.5	16.2	12.9	11.9	12.2	10.1	10.3	11.5	11.1	11.6	12.1	9.7	12.0	8.9	8.9	11.0	14.3	24	18.8	8.9	12.5	0	0
25	11.1	18.9	15.0	8.6	6.7	12.6	24.5	23.9	24.5	9.4	17.6	5.6	4.7	5.1	7.0	7.1	6.5	6.9	6.8	5.3	5.4	4.7	4.1	6.2	24	24.5	4.1	10.3	0	0
26	4.7	4.3	3.0	3.1	3.9	4.3	6.8	6.7	5.3	5.0	5.7	3.8	4.0	4.4	4.0	4.1	5.1	6.9	11.8	18.3	13.7	26.0	19.2	14.7	24	26.0	3.0	7.9	0	0
27	9.8	22.6	65.6	48.0	51.7	31.6	8.4	4.3	4.4	5.0	5.3	5.3	4.7	4.2	3.9	4.2	4.4	5.9	5.2	5.6	5.8	7.2	8.5	9.3	24	65.6	3.9	13.8	0	0
28	7.0	6.9	6.4	5.9	7.1	6.4	6.9	8.6	8.1	7.0	6.7	6.9	5.7	5.5	5.5	5.8	6.2	5.3	12.0	13.5	7.5	6.2	7.2	7.4	24	13.5	5.3	7.1	0	0
29	20.5	8.9	3.5	3.8	5.2	4.9	5.5	5.8	7.9	6.4	10.7	8.5	7.9	4.4	5.0	4.8	5.9	5.6	6.0	4.3	6.8	8.8	7.0	7.8	24	20.5	3.5	6.9	0	0
30																									0					
31																									0					
Count	25	25	25	25	25	25	25	25	25	25	24	22	24	24	25	25	25	25	25	25	25	25	25	25	594	25	22	24.8		
Maximum	73.9	76.3	77.4	82.3	79.7	57.0	50.8	125.9	74.1	40.0	45.2	28.6	32.8	35.3	39.8	38.2	41.2	40.0	30.5	42.6	56.7	79.9	45.3	48.3	24	125.9	28.6	55.9		
Minimum	3.2	2.8	3.0	3.1	3.5	2.8	2.5	3.1	4.4	4.3	2.9	2.2	2.4	1.1	0.9	1.4	0.5	0.9	0.6	2.0	5.4	4.7	4.1	3.3	0	9.6	0.5			
Average	16.8	16.3	17.3	15.9	17.4	16.2	16.0	22.2	18.3	12.6	11.3	8.9	9.4	8.5	8.5	8.8	9.3	11.0	12.4	13.7	17.5	21.0	19.9	17.3	19	39	5	14.5		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													125.9
													39.3
Data	4.1	5.2	6.5	7.5	9.9	12.2	15.1	19.6	32.7	41.2	74.3	125.9	14.1

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - March ($\mu g/m^3$)	COURTICE 2016																												
Hour																													
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	7.8	7.7	5.4	7.3	8.9	6.8	8.2	9.6	10.6	14.4	6.2	7.2	6.2	6.5	8.9	10.7	9.4	8.1	7.3	7.0	7.9	7.4	5.8	6.9	24	14.4	5.4	8.0	0	0
2	8.0	7.2	4.4	3.7	5.5	7.8	6.1	6.4	6.4	4.5	4.1	4.8	4.2	4.3	4.5	5.1	6.4	9.0	12.6	16.9	21.6	19.7	23.1	28.1	24	28.1	3.7	9.4	0	0
3	34.5	57.2	54.3	30.7	30.5	24.9	15.8	23.2	17.6	9.7	4.9	3.3	4.8	2.9	3.1	5.6	5.1	6.6	40.9	29.7	39.1	36.4	28.1	22.3	24	57.2	2.9	22.1	0	0
4	25.9	15.3	12.1	10.8	14.4	17.5	23.0	25.3	16.6	7.2	7.4	2.6	2.2	2.3	1.4	1.8	1.8	1.9	2.4	5.4	45.3	79.6	68.1	65.4	24	79.6	1.4	19.0	0	0
5	62.6	36.1	32.7	24.7	23.0	21.4	18.6	22.0	20.0	8.2	3.3	2.8	2.9	2.8	2.7	2.7	2.8	3.1	3.8	11.6	40.2	35.3	35.6	32.4	24	62.6	2.7	18.8	0	0
6	23.9	26.0	17.1	16.0	18.8	20.7	24.1	25.7	21.9	19.1	11.9	9.6	7.9	17.8	12.5	7.2	7.3	5.2	5.6	7.0	7.2	5.0	4.8	5.7	24	26.0	4.8	13.7	0	0
7	5.1	5.4	5.5	6.2	5.6	5.8	5.7	6.9	8.5	10.7	12.1	14.2	14.4	13.0	12.2	10.7	12.7	15.9	59.1	59.7	56.6	47.1	36.5	33.5	24	59.7	5.1	19.3	0	0
8	50.1	53.0	48.0	33.3	42.0	42.9	32.6	31.9	25.7	19.3	16.7	16.2	13.4	14.3	14.0	13.0	14.1	18.7	26.8	17.0	19.3	35.7	57.7	61.4	24	61.4	13.0	29.9	0	0
9	56.3	58.1	52.8	58.1	56.6	62.6	59.1	52.0	25.7	11.8	10.1	9.1	8.7	7.4	5.6	6.4	7.6	7.6	8.2	8.1	9.2	29.7	23.8	76.5	24	76.5	5.6	29.6	0	0
10	50.3	12.4	27.8	50.6	42.6	30.6	25.5	44.0	39.0	24.7	23.5	18.8	13.8	13.3	18.4	17.0	14.8	14.5	14.0	14.6	12.2	11.6	8.7	6.2	24	50.6	6.2	22.9	0	0
11	6.1	5.4	5.1	6.4	8.2	5.1	7.1	8.6	7.6	6.7	C	C	C	2.7	2.5	6.3	6.8	13.1	20.5	51.8	60.7	51.6	13.2	3.8	21	60.7	2.5	14.2	0	0
12	22.9	45.8	41.2	37.7	30.3	26.9	27.2	22.1	12.7	14.0	11.1	12.3	9.8	10.7	7.2	7.0	7.6	6.4	19.8	50.6	55.0	11.8	61.7	59.5	24	61.7	6.4	25.5	0	0
13	56.4	49.9	22.3	6.9	23.4	22.6	10.2	8.6	6.8	4.6	3.3	1.7	4.4	3.9	3.7	8.2	5.6	3.5	5.8	7.8	8.1	10.5	14.0	9.0	24	56.4	1.7	12.6	0	0
14	6.8	4.0	4.9	7.2	4.0	3.4	7.6	6.6	11.2	7.4	7.4	7.7	7.9	8.3	9.0	11.1	10.6	6.4	8.6	7.9	6.8	7.8	15.7	11.3	24	15.7	3.4	7.9	0	0
15	7.4	6.3	10.1	17.9	28.1	33.8	27.9	30.2	32.4	20.4	16.6	9.6	8.8	6.2	6.2	4.8	10.9	13.6	15.2	13.4	16.5	13.7	22.7	17.5	24	33.8	4.8	16.3	0	0
16	17.4	18.2	7.4	9.9	13.7	5.8	9.0	10.6	5.5	3.9	5.0	6.2	5.3	4.8	5.3	5.0	7.8	5.9	6.5	21.8	35.1	16.6	35.1	52.2	24	52.2	3.9	13.1	0	0
17	15.5	16.4	46.2	54.4	41.1	51.4	54.4	26.9	8.7	5.7	5.6	5.9	8.0	21.1	12.6	13.0	10.4	5.0	11.9	15.1	11.0	14.7	15.6	33.4	24	54.4	5.0	21.0	0	0
18	23.3	18.7	14.2	18.6	31.7	41.1	32.1	15.3	6.9	6.9	6.2	5.0	4.2	3.3	3.8	3.4	4.5	7.4	6.4	9.4	7.6	8.0	6.2	5.4	24	41.1	3.3	12.1	0	0
19	5.2	4.0	9.2	25.1	37.3	12.1	13.0	4.4	1.7	3.2	1.8	0.5	0.1	0.3	0.0	0.2	0.1	0.5	0.7	3.1	47.5	43.6	41.3	37.2	24	47.5	0.0	12.2	0	0
20	23.5	20.9	16.5	9.3	9.0	9.5	6.1	5.9	6.1	3.4	2.1	1.4	0.8	0.7	0.3	0.7	0.4	0.5	0.9	10.6	61.7	65.4	61.6	56.2	24	65.4	0.3	15.6	0	0
21	50.3	49.8	44.2	10.5	25.8	40.7	48.0	41.9	19.7	5.8	5.2	5.4	3.2	3.5	3.9	3.2	3.7	4.6	9.1	13.3	24.4	32.0	73.5	62.1	24	73.5	3.2	24.3	0	0
22	65.2	61.9	58.2	47.4	46.3	54.5	56.6	42.1	35.2	15.3	8.4	8.8	6.0	7.3	7.7	22.7	20.6	28.5	30.9	20.5	13.5	31.7	24.5	36.9	24	65.2	6.0	31.3	0	0
23	32.1	27.8	15.2	14.6	16.0	17.8	17.7	14.3	13.3	10.7	10.7	8.7	9.5	7.1	6.9	2.5	3.6	12.2	10.3	15.8	15.2	11.0	14.3	11.4	24	32.1	2.5	13.3	0	0
24	12.3	12.4	5.4	6.3	7.0	6.0	5.2	9.4	11.2	8.6	7.1	10.3	7.8	9.7	10.2	11.2	10.9	9.1	9.6	9.2	10.8	13.1	12.4	10.6	24	13.1	5.2	9.4	0	0
25	8.1	8.6	10.9	13.9	31.4	34.4	27.8	12.6	6.1	6.4	4.0	4.3	3.8	3.8	3.5	6.4	4.7	4.3	7.4	9.3	17.7	38.4	54.1	50.2	24	54.1	3.5	15.5	0	0
26	49.0	37.7	33.1	28.9	27.7	22.4	24.6	21.7	15.5	7.0	5.7	2.6	2.1	1.4	1.4	1.3	1.4	3.1	13.6	11.6	29.5	29.8	19.4	32.0	24	49.0	1.3	17.6	0	0
27	13.6	9.7	8.8	13.6	10.6	11.1	13.3	13.5	29.1	6.2	3.0	3.2	4.7	7.4	10.4	4.6	7.5	29.5	58.3	37.4	33.5	33.6	15.3	9.9	24	58.3	3.0	16.1	0	0
28	5.2	20.3	9.2	7.6	12.0	16.9	7.8	5.9	3.7	3.4	3.0	2.9	3.8	8.5	6.0	5.1	5.8	4.6	5.5	5.1	6.5	7.4	6.4	5.9	24	20.3	2.9	7.0	0	0
29	6.2	3.5	3.3	7.8	7.1	7.5	6.7	4.1	3.9	3.7	3.3	2.9	3.1	2.4	2.7	2.8	7.8	5.2	9.8	24.0	35.4	14.3	12.1	45.3	24	45.3	2.4	9.4	0	0
30	73.0	66.3	53.4	60.5	57.4	55.5	46.4	36.2	12.4	9.3	6.5	4.4	4.9	6.4	5.1	5.8	7.1	19.1	7.9	5.3	3.6	3.2	18.1	21.5	24	73.0	3.2	24.6	0	0
31	25.8	25.1	10.9	4.5	9.0	6.5	2.7	3.6	3.8	4.1	5.1	4.3	4.2	3.7	3.3	3.6	3.3	3.5	3.0	3.4	5.5	8.8	3.0	2.8	24	25.8	2.7	6.4	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	741	31	30	30.9		
Maximum	73.0	66.3	58.2	60.5	57.4	62.6	59.1	52.0	39.0	24.7	23.5	18.8	14.4	21.1	18.4	22.7	20.6	29.5	59.1	59.7	61.7	79.6	73.5	76.5	24	79.6	14.4	47.2		
Minimum	5.1	3.5	3.3	3.7	4.0	3.4	2.7	3.6	1.7	3.2	1.8	0.5	0.1	0.3	0.0	0.2	0.1	0.5	0.7	3.1	3.6	3.2	3.0	2.8	21	13.1	0.0	2.3		
Average	27.4	25.5	22.3	21.0	23.4	23.4	21.6	19.1	14.4	9.2	7.4	6.6	6.0	6.7	6.3	6.7	7.2	8.9	14.3	16.9	24.7	25.0	26.8	29.4	24	49	4	16.7		

												Maximum
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100						79.6
																		31.3
Data	3.4	5.1	6.4	7.8	9.9	13.3	18.1	27.7	42.9	55.0	65.3	79.6						16.7

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NO_2 - January ($\mu g/m^3$)	Rundle Road 2016																											
Hour																												
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	20.7	12.7	11.5	12.0	12.9	9.2	7.7	11.1	9.1	10.5	12.9	7.4	7.2	7.2	11.7	14.5	13.7	14.7	15.1	11.9	10.9	9.7	11.9	16.1	24	20.7	7.2	11.8	0	0
2	19.0	19.0	20.4	18.9	20.2	24.0	21.0	11.2	10.2	14.3	17.8	15.1	13.1	13.0	12.6	13.4	16.6	13.7	11.8	13.4	11.1	11.3	9.6	7.1	24	24.0	7.1	14.9	0	0
3	11.6	11.2	11.1	12.4	13.0	12.6	11.0	10.8	12.3	14.3	17.7	14.3	5.1	3.6	3.3	3.0	3.0	3.2	3.1	2.8	3.0	2.8	3.0	2.9	24	17.7	2.8	8.0	0	0
4	2.8	2.9	2.6	2.4	2.6	2.3	3.8	3.4	3.7	4.6	4.3	3.7	3.8	3.5	3.7	4.1	4.5	4.2	3.2	4.1	4.6	6.1	5.9	4.5	24	6.1	2.3	3.8	0	0
5	5.6	6.6	5.0	6.3	7.6	6.3	11.8	17.0	22.2	23.8	37.2	59.0	40.8	20.8	26.3	19.8	23.6	20.3	16.0	14.6	13.7	17.2	18.4	45.4	24	59.0	5.0	20.2	0	0
6	28.1	17.4	24.8	39.2	47.9	43.6	44.9	56.0	61.2	44.1	25.1	20.2	19.5	20.4	19.1	19.3	22.1	26.5	30.3	30.3	34.7	42.4	27.8	47.1	24	61.2	17.4	33.0	0	0
7	44.2	43.1	43.7	40.2	42.9	40.1	38.4	40.3	37.7	33.8	33.7	33.6	27.7	31.8	30.6	26.8	46.7	45.9	41.6	51.9	44.8	35.0	30.2	27.2	24	51.9	26.8	38.0	0	0
8	21.4	19.4	18.3	19.3	18.9	20.0	27.7	25.5	25.0	21.8	22.6	24.8	23.8	22.1	26.4	27.5	26.2	33.2	28.8	39.6	34.4	24.9	34.2	22.8	24	39.6	18.3	25.4	0	0
9	25.8	24.1	23.7	22.1	25.6	25.4	19.8	26.6	21.6	19.0	17.6	17.0	15.3	14.3	15.2	16.4	16.2	17.5	17.1	20.6	20.1	20.0	18.4	15.7	24	26.6	14.3	19.8	0	0
10	9.6	16.3	9.7	9.4	8.5	7.6	8.0	8.0	6.3	8.6	8.5	7.0	15.0	12.6	9.7	16.4	8.4	6.3	7.0	6.7	6.4	5.5	6.2	7.9	24	16.4	5.5	9.0	0	0
11	8.7	8.3	8.6	10.4	10.4	12.5	15.5	16.6	17.2	18.1	13.4	10.4	9.5	9.5	9.9	9.9	16.0	18.5	25.5	30.7	36.5	43.3	45.7	41.7	24	45.7	8.3	18.6	0	0
12	31.2	24.9	27.6	33.0	12.5	11.5	10.3	32.2	14.6	13.4	17.5	12.7	14.1	16.8	18.5	16.7	20.6	21.1	18.1	26.3	9.9	7.7	9.6	7.9	24	33.0	7.7	17.9	0	0
13	6.1	6.4	5.2	6.5	7.7	5.4	17.5	19.8	23.2	20.7	26.4	31.3	12.7	15.3	14.7	17.0	24.3	22.8	28.8	32.1	29.9	35.7	32.1	28.7	24	35.7	5.2	19.6	0	0
14	25.5	22.6	22.5	25.6	27.8	44.0	47.4	53.1	43.0	41.9	38.0	28.5	32.7	21.7	23.6	21.6	26.5	35.5	26.6	24.3	19.8	27.4	24.1	28.0	24	53.1	19.8	30.5	0	0
15	13.1	17.1	21.4	11.6	19.9	15.9	18.6	22.4	22.3	21.6	16.5	13.9	13.3	15.0	17.6	21.9	26.6	22.7	23.8	23.4	26.2	30.7	34.6	36.5	24	36.5	11.6	21.1	0	0
16	34.8	29.8	29.2	15.7	11.7	12.9	17.6	21.3	20.9	12.1	7.5	6.3	5.7	4.8	4.2	5.1	5.1	5.6	6.2	5.9	10.0	16.2	15.8	13.1	24	34.8	4.2	13.2	0	0
17	9.6	13.5	17.9	11.0	4.5	5.5	11.1	7.1	10.5	16.3	10.5	9.7	10.0	10.8	15.3	6.5	7.0	6.9	5.9	5.7	8.9	12.7	17.4	22.7	24	22.7	4.5	10.7	0	0
18	14.5	8.3	5.8	6.3	6.8	7.3	9.3	12.0	13.0	8.0	5.9	6.0	5.4	4.5	4.7	4.2	5.4	8.0	8.4	8.7	6.4	9.6	12.0	12.6	24	14.5	4.2	8.0	0	0
19	5.3	3.5	7.3	4.6	4.1	5.2	10.6	16.7	23.8	32.2	9.8	4.7	5.3	5.7	5.1	5.7	7.5	6.5	5.0	5.2	5.2	5.3	4.7	4.0	24	32.2	3.5	8.1	0	0
20	3.1	4.9	7.0	5.9	5.4	3.8	4.5	12.1	14.5	13.6	19.3	29.8	23.6	29.8	32.1	24.4	20.7	20.8	18.2	17.3	16.0	12.7	11.8	11.1	24	32.1	3.1	15.1	0	0
21	8.0	7.0	6.3	5.4	4.8	6.1	9.2	14.5	9.6	6.5	4.2	3.5	3.3	4.1	4.1	4.3	6.5	7.8	6.9	6.4	7.5	6.0	5.9	5.3	24	14.5	3.3	6.4	0	0
22	5.5	4.2	3.9	3.8	3.8	4.1	5.9	16.2	14.1	24.5	9.8	10.5	15.5	8.8	14.4	11.6	10.0	8.8	6.7	6.4	7.8	8.0	6.9	6.9	24	24.5	3.8	9.1	0	0
23	5.8	5.3	5.0	3.9	3.8	3.7	3.9	4.6	5.1	3.9	3.8	3.8	3.6	3.3	3.6	3.3	3.3	4.3	5.5	12.1	13.5	5.4	5.9	4.3	24	13.5	3.3	5.0	0	0
24	4.2	4.8	4.8	5.2	5.6	10.7	10.6	19.1	28.7	22.2	24.5	25.2	13.6	12.5	15.5	21.0	19.7	27.1	32.1	36.8	36.8	35.5	44.7	38.0	24	44.7	4.2	20.8	0	0
25	33.5	50.3	45.9	41.5	41.9	48.4	57.2	37.7	18.1	18.3	23.0	28.6	24.5	17.8	19.1	18.9	20.9	22.4	27.7	33.1	42.4	45.7	50.8	50.1	24	57.2	17.8	34.1	0	0
26	48.9	32.1	15.2	19.7	33.5	18.7	23.1	16.2	17.1	17.1	14.6	15.1	15.9	21.8	21.6	21.5	25.0	25.3	25.6	21.4	20.7	19.9	26.2	29.7	24	48.9	14.6	22.7	0	0
27	23.2	21.6	20.6	22.8	11.6	4.1	4.3	4.9	8.3	8.7	6.3	4.7	4.5	4.4	5.3	5.4	11.8	24.9	24.4	18.9	18.2	12.3	9.2	12.0	24	24.9	4.1	12.2	0	0
28	14.7	12.5	11.5	11.7	12.8	11.8	12.3	13.4	13.5	12.6	12.9	14.2	16.1	16.1	17.2	18.6	19.5	18.3	20.8	21.7	22.7	24.5	26.5	34.9	24	34.9	11.5	17.1	0	0
29	49.8	45.6	28.7	14.1	7.0	5.3	4.7	4.7	4.9	4.7	3.8	9.7	C	C	5.8	5.6	5.7	6.2	6.3	6.2	6.7	7.5	7.0	6.5	22	49.8	3.8	11.2	0	0
30	6.9	7.0	12.3	23.8	24.9	28.6	16.1	13.5	14.2	12.0	13.4	12.7	15.9	17.2	18.0	16.0	18.9	19.3	25.0	28.9	35.3	29.0	26.0	29.3	24	35.3	6.9	19.3	0	0
31	37.0	32.7	30.9	28.2	24.3	25.9	21.9	19.1	24.5	32.3	31.1	27.1	32.1	24.5	30.0	26.7	24.9	29.2	28.0	44.9	44.9	19.8	17.7	13.6	24	44.9	13.6	28.0	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	742	31	30	30.9		
Maximum	49.8	50.3	45.9	41.5	47.9	48.4	57.2	56.0	61.2	44.1	38.0	59.0	40.8	31.8	32.1	27.5	46.7	45.9	41.6	51.9	44.9	45.7	50.8	50.1	24	61.2	27.5	46.2		
Minimum	2.8	2.9	2.6	2.4	2.6	2.3	3.8	3.4	3.7	3.9	3.8	3.5	3.3	3.3	3.3	3.0	3.0	3.2	3.1	2.8	3.0	2.8	3.0	2.9	22	6.1	2.3	3.1		
Average	18.7	17.3	16.4	15.9	15.6	15.6	17.0	18.9	18.4	17.9	16.4	16.5	15.0	13.8	14.8	14.4	16.4	17.7	17.7	19.7	19.7	19.0	19.4	20.4	24	34	9	17		

												Maximum
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100						61.2
																		38.0
Data	4.6	6.2	8.6	11.9	14.6	18.1	21.7	26.2	33.5	42.4	50.2	61.2						17.2

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

NO_2 - February ($\mu g/m^3$) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	11.4	11.1	15.8	11.1	9.3	9.8	8.4	8.6	8.9	7.7	8.1	10.5	7.1	6.8	6.8	8.1	12.6	13.0	25.0	20.5	23.2	21.6	21.8	9.8	24	25.0	6.8	12.4	0	0
2	6.2	5.2	5.6	6.9	5.2	5.4	4.9	14.5	11.1	9.7	6.0	9.5	14.0	13.3	17.1	15.5	9.5	10.6	11.8	12.6	14.4	15.4	15.8	11.2	24	17.1	4.9	10.5	0	0
3	14.8	9.7	11.6	18.4	11.0	21.1	23.4	30.4	21.7	41.9	35.7	47.3	32.3	25.6	A	A	17.0	17.7	20.5	19.3	13.1	12.4	31.7	18.9	22	47.3	9.7	22.5	0	0
4	18.1	12.4	15.6	15.4	17.4	9.6	8.4	21.1	14.6	13.0	8.0	6.9	6.1	6.9	7.9	5.8	5.8	6.2	5.5	4.8	4.5	5.0	5.3	4.7	24	21.1	4.5	9.5	0	0
5	4.6	4.7	4.4	4.5	4.2	4.7	4.5	5.6	6.2	5.1	4.7	5.0	10.6	15.1	23.7	26.6	21.2	33.0	39.8	42.9	30.3	29.4	22.3	23.5	24	42.9	4.2	15.7	0	0
6	22.9	25.2	25.1	37.5	30.6	27.3	25.7	26.7	25.0	20.1	14.7	16.2	16.7	14.2	13.8	14.1	15.2	14.5	15.0	13.2	18.4	17.3	22.4	22.0	24	37.5	13.2	20.6	0	0
7	24.8	23.0	23.4	22.5	24.7	27.3	32.2	33.6	34.2	35.1	22.2	15.6	18.2	20.8	22.5	13.5	15.2	13.7	13.2	13.3	21.9	14.2	12.0	12.2	24	35.1	12.0	21.2	0	0
8	13.0	16.6	13.9	13.0	14.0	15.9	24.7	18.9	14.4	14.8	16.1	14.1	16.1	16.6	14.1	13.7	14.1	19.3	13.5	16.9	13.9	22.1	16.5	15.9	24	24.7	13.0	15.9	0	0
9	15.4	9.5	11.9	9.9	10.1	11.6	10.4	10.8	13.5	11.3	12.1	14.0	15.8	18.4	22.3	22.5	26.4	21.2	20.3	21.8	19.7	26.7	19.0	18.1	24	26.7	9.5	16.4	0	0
10	20.7	13.1	12.6	11.3	9.2	9.0	9.6	11.2	12.5	7.6	7.0	6.8	8.6	7.2	7.0	7.7	8.4	6.6	7.1	7.3	6.7	6.2	7.3	8.0	24	20.7	6.2	9.1	0	0
11	6.8	7.3	5.4	5.1	4.8	5.4	5.5	5.5	6.6	6.6	6.5	6.6	5.3	5.7	5.8	6.4	6.5	6.1	7.4	10.9	16.1	19.9	34.2	48.8	24	48.8	4.8	10.2	0	0
12	54.2	59.9	44.4	30.5	34.6	31.4	28.0	42.3	37.6	33.5	24.2	17.7	16.9	16.9	20.0	24.4	25.5	13.4	14.5	6.4	5.6	5.0	5.3	5.0	24	59.9	5.0	24.9	0	0
13	4.9	5.3	5.3	5.1	5.4	5.4	5.0	5.2	5.4	5.0	4.9	5.0	4.8	4.7	4.7	5.4	5.1	5.5	5.9	4.9	5.1	4.9	5.1	4.5	24	5.9	4.5	5.1	0	0
14	5.1	6.5	6.2	6.8	7.1	9.0	13.7	8.0	6.8	5.3	6.1	9.4	12.8	6.6	6.3	7.8	8.5	12.6	18.4	17.5	19.3	20.7	19.3	18.6	24	20.7	5.1	10.8	0	0
15	15.6	14.7	12.9	11.7	19.8	14.4	10.4	21.0	14.8	11.3	20.8	12.9	11.1	15.6	15.7	18.8	20.2	18.7	21.6	22.5	20.7	26.4	18.6	18.0	24	26.4	10.4	17.0	0	0
16	20.6	25.6	24.2	25.4	24.2	23.6	16.2	16.1	17.3	15.8	19.2	14.1	11.9	11.4	10.8	12.1	13.1	10.9	9.4	8.5	9.6	9.7	13.4	47.0	24	47.0	8.5	17.1	0	0
17	51.1	34.9	31.4	34.1	43.4	26.9	30.4	45.4	50.3	27.5	10.1	8.2	7.8	7.0	6.5	6.3	7.1	7.0	6.9	7.5	7.9	10.2	12.6	10.1	24	51.1	6.3	20.4	0	0
18	11.7	7.6	7.1	11.0	10.0	11.2	14.3	41.2	27.4	11.7	16.8	27.2	21.1	7.1	7.4	3.5	1.6	19.5	30.5	29.9	39.0	37.1	34.1	34.2	24	41.2	1.6	19.3	0	0
19	19.8	20.5	18.1	23.6	17.9	31.2	17.6	17.1	26.1	21.7	19.3	18.6	19.9	24.4	10.7	13.0	21.5	14.4	19.8	20.7	19.1	25.6	26.6	12.8	24	31.2	10.7	20.0	0	0
20	16.0	13.5	14.8	12.9	11.6	13.7	10.4	11.6	14.1	12.8	15.3	14.3	14.1	12.7	13.4	13.0	7.3	7.3	7.4	7.3	8.7	7.2	7.2	7.3	24	16.0	7.2	11.4	0	0
21	7.6	7.2	10.1	24.1	31.1	25.6	8.1	7.2	8.6	5.5	5.3	5.1	5.2	4.9	4.7	4.9	5.0	5.1	4.7	5.0	4.8	6.9	6.1	6.0	24	31.1	4.7	8.7	0	0
22	5.7	5.4	5.2	5.1	5.1	5.0	5.5	8.0	6.8	6.5	6.9	13.3	8.6	8.0	9.0	12.1	15.4	16.4	29.4	27.3	30.5	27.9	38.5	26.8	24	38.5	5.0	13.7	0	0
23	28.0	18.1	18.1	12.6	16.7	10.8	9.0	C	C	C	4.9	4.6	6.4	8.1	12.8	11.7	10.8	14.5	7.2	14.3	15.0	15.2	11.9	4.2	21	28.0	4.2	12.1	0	0
24	4.1	15.4	7.9	5.9	6.5	7.3	8.1	9.1	8.8	7.5	7.9	5.8	5.6	5.6	5.0	5.1	6.8	6.4	7.3	5.0	8.6	7.8	6.1	6.3	24	15.4	4.1	7.1	0	0
25	3.8	2.9	2.5	2.0	1.3	1.2	2.8	15.9	4.8	2.4	1.8	0.7	0.9	0.4	1.5	2.5	1.4	1.1	0.6	0.8	0.0	0.2	0.2	0.1	24	15.9	0.0	2.2	0	0
26	0.0	0.0	0.0	0.0	0.0	0.3	0.4	1.4	1.4	0.8	0.6	1.3	1.3	1.9	1.4	1.7	1.3	1.5	3.3	10.8	22.2	34.3	31.5	36.3	24	36.3	0.0	6.4	0	0
27	17.6	41.1	48.8	47.9	42.8	39.8	13.2	7.9	8.5	8.1	7.9	9.5	6.6	8.6	7.6	8.7	7.5	9.0	7.1	7.6	8.6	11.2	11.8	13.1	24	48.8	6.6	16.7	0	0
28	10.4	7.3	8.6	9.1	8.5	14.8	8.8	17.1	19.1	9.5	7.7	9.2	9.6	6.7	7.9	10.2	12.2	13.5	20.8	11.6	15.9	19.4	8.2	7.2	24	20.8	6.7	11.4	0	0
29	17.7	9.8	5.5	13.0	6.7	1.8	1.8	2.9	3.3	2.9	5.1	9.0	12.2	9.0	10.8	10.7	11.4	4.9	1.7	1.1	1.2	0.9	0.4	1.2	24	17.7	0.4	6.0	0	0
30																									0					
31																									0					
Count	29	29	29	29	29	29	29	28	28	28	29	29	29	29	28	28	29	29	29	29	29	29	29	29	691	29	28	28.8		
Maximum	54.2	59.9	48.8	47.9	43.4	39.8	32.2	45.4	50.3	41.9	35.7	47.3	32.3	25.6	23.7	26.6	26.4	33.0	39.8	42.9	39.0	37.1	38.5	48.8	24	59.9	23.7	40.0		
Minimum	0.0	0.0	0.0	0.0	0.0	0.3	0.4	1.4	1.4	0.8	0.6	0.7	0.9	0.4	1.4	1.7	1.3	1.1	0.6	0.8	0.0	0.2	0.2	0.1	0	5.9	0.0			
Average	15.6	14.9	14.4	15.1	14.9	14.5	12.5	16.6	15.4	12.9	11.2	11.7	11.3	10.7	10.6	10.9	11.5	11.8	13.6	13.5	14.6	15.9	16.0	15.6	22	31	6	13.6		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													59.9
													24.9
Data	4.7	5.6	7.1	8.6	11.2	13.5	16.1	20.5	26.7	34.1	47.3	59.9	13.6

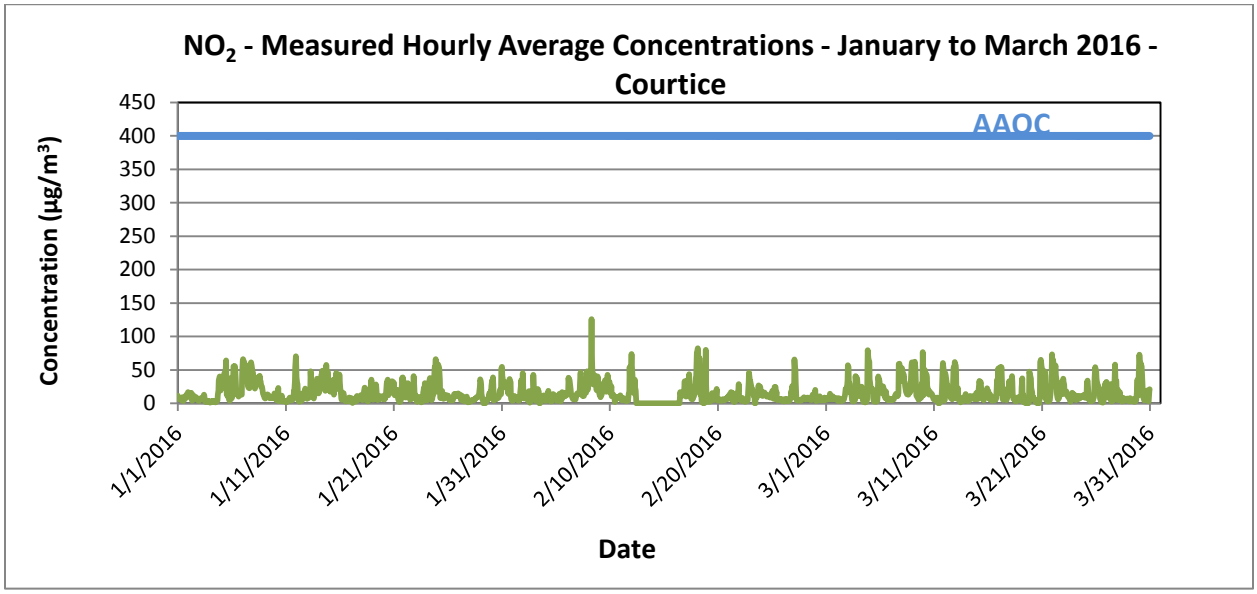
Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

NO_2 - March ($\mu g/m^3$)	Rundle Road 2016																											
Hour																												
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	0.4	0.2	0.7	1.2	0.8	0.8	2.2	6.2	6.5	5.4	6.7	3.0	3.3	2.4	2.5	3.2	2.7	5.7	5.7	2.0	2.8	9.6	1.7	1.7	24	9.6	0.2	3.2	0	0
2	1.3	0.7	0.5	0.1	1.4	2.4	2.2	1.9	1.3	0.8	0.7	0.9	1.3	1.0	1.2	0.6	0.9	1.5	2.2	2.3	2.1	2.5	2.1	4.1	24	4.1	0.1	1.5	0	0
3	6.0	9.0	10.4	3.8	5.7	4.2	6.0	11.6	7.8	6.2	2.9	1.7	1.1	1.8	2.6	5.7	3.0	5.6	8.7	10.9	18.7	15.9	11.3	20.6	24	20.6	1.1	7.5	0	0
4	12.8	14.8	6.7	4.1	4.8	14.9	7.9	14.4	10.4	8.5	3.2	3.6	4.6	2.5	4.1	5.2	4.6	6.0	23.7	20.6	23.1	20.6	15.8	18.4	24	23.7	2.5	10.6	0	0
5	17.1	15.7	11.3	12.7	9.3	10.0	7.5	7.9	9.6	8.1	4.3	3.9	4.0	3.1	3.8	3.7	4.0	7.6	17.2	20.8	15.8	16.9	10.0	7.7	24	20.8	3.1	9.7	0	0
6	6.3	6.2	5.1	5.5	4.4	4.3	4.3	7.2	9.9	12.4	7.7	8.6	6.5	20.2	15.7	9.7	12.0	13.9	16.4	18.8	22.7	11.4	8.6	12.8	24	22.7	4.3	10.4	0	0
7	9.8	9.5	8.7	12.0	12.5	10.5	13.8	15.8	17.7	18.2	23.1	27.3	24.6	23.1	25.4	26.3	23.0	25.5	28.8	36.6	33.7	43.9	56.6	54.1	24	56.6	8.7	24.2	0	0
8	53.6	42.2	33.1	24.4	35.4	35.6	37.0	39.7	39.8	21.9	18.5	20.8	14.6	17.0	16.1	16.5	16.6	16.8	31.6	39.1	32.1	40.6	21.3	17.6	24	53.6	14.6	28.4	0	0
9	25.6	11.7	17.1	29.2	22.3	19.5	19.7	33.1	34.3	24.9	25.5	17.6	22.2	20.2	18.0	17.6	21.7	17.6	19.8	27.6	22.6	41.9	70.8	68.6	24	70.8	11.7	27.0	0	0
10	37.3	26.5	36.6	8.6	4.3	3.8	35.2	36.3	17.7	8.1	8.5	7.2	8.3	6.0	5.5	6.3	6.1	4.6	3.8	4.1	4.0	3.9	2.9	2.8	24	37.3	2.8	12.0	0	0
11	1.8	2.1	1.7	1.9	1.6	1.8	2.9	C	C	C	5.9	4.9	4.7	4.7	9.9	12.7	14.8	22.7	36.6	28.1	24.7	23.1	34.8	33.2	21	36.6	1.6	13.1	0	0
12	18.0	16.5	15.3	14.1	17.5	14.0	17.0	18.9	30.9	22.8	19.2	19.5	17.1	20.7	19.0	18.0	18.3	14.8	21.2	31.1	43.5	39.9	56.3	34.0	24	56.3	14.0	23.2	0	0
13	27.6	33.8	15.4	10.0	9.8	13.0	14.8	7.9	10.7	17.0	6.3	7.4	7.1	6.5	5.5	9.9	10.0	13.3	13.5	12.8	11.6	17.3	15.1	13.6	24	33.8	5.5	12.9	0	0
14	11.2	12.1	8.0	7.3	8.7	15.6	8.7	11.7	10.3	9.1	10.5	8.9	8.9	8.2	14.5	17.3	13.5	9.9	11.8	18.0	17.6	11.4	16.5	19.3	24	19.3	7.3	12.0	0	0
15	16.2	17.5	17.0	13.7	13.4	15.7	24.4	20.3	16.7	11.0	9.1	6.5	6.0	6.2	6.3	7.2	17.1	5.9	5.8	6.0	6.2	8.0	7.0	6.5	24	24.4	5.8	11.2	0	0
16	6.8	10.7	6.4	5.8	7.6	22.7	10.5	10.5	10.8	17.6	8.6	9.6	10.5	9.8	13.9	12.4	14.7	20.7	24.2	20.5	46.1	56.3	8.1	16.4	24	56.3	5.8	15.9	0	0
17	43.1	35.8	27.4	21.2	20.6	21.1	19.2	37.1	23.3	17.1	17.2	16.1	15.9	15.8	25.7	12.4	6.5	22.1	39.9	6.8	7.1	7.3	7.2	8.9	24	43.1	6.5	19.8	0	0
18	9.2	8.6	18.0	17.6	11.4	13.4	19.1	12.7	7.7	4.7	4.5	5.0	4.1	4.1	4.0	4.0	4.1	4.1	4.1	4.5	4.3	4.3	4.3	4.2	24	19.1	4.0	7.6	0	0
19	4.1	3.9	3.9	6.0	4.6	4.2	4.8	4.6	4.1	4.0	3.8	5.0	4.5	5.6	7.6	5.2	5.2	9.1	9.4	7.9	9.8	10.7	10.0	12.8	24	12.8	3.8	6.3	0	0
20	14.0	25.6	22.4	9.0	8.4	18.0	13.2	7.1	6.3	6.5	10.1	14.6	4.8	5.0	5.0	5.1	5.7	6.9	12.8	11.3	13.6	12.8	29.1	24.3	24	29.1	4.8	12.2	0	0
21	25.8	20.4	9.0	5.2	6.7	11.1	17.1	23.2	17.7	6.4	4.9	5.1	4.7	4.5	4.3	4.4	4.0	4.0	4.4	6.8	9.7	36.4	26.6	21.8	24	36.4	4.0	11.8	0	0
22	19.2	29.1	34.9	31.8	22.9	20.5	22.1	41.6	57.3	34.5	17.7	16.5	13.9	15.6	15.4	16.5	13.8	22.7	18.3	29.2	31.8	27.6	19.9	31.9	24	57.3	13.8	25.2	0	0
23	28.8	18.5	11.1	9.1	9.2	11.0	10.6	12.5	9.7	7.7	10.4	6.3	6.0	6.3	6.0	9.2	15.6	18.4	23.5	19.8	9.3	15.6	7.9	10.7	24	28.8	6.0	12.2	0	0
24	8.5	14.3	6.4	5.7	6.1	9.6	8.1	6.9	8.5	16.8	20.3	11.3	9.4	9.5	12.1	8.6	9.2	9.4	9.5	9.6	14.1	19.6	18.3	17.2	24	20.3	5.7	11.2	0	0
25	16.2	13.4	13.6	13.4	13.3	28.4	43.2	16.2	7.0	6.2	5.8	5.5	5.2	5.2	5.3	4.8	4.8	5.0	6.5	7.8	8.3	12.8	18.0	17.6	24	43.2	4.8	11.8	0	0
26	14.4	17.9	18.2	14.1	10.2	9.6	8.5	20.8	16.0	15.9	15.8	13.2	22.8	24.4	11.0	7.8	6.3	17.0	8.4	16.0	15.4	20.0	15.3	13.9	24	24.4	6.3	14.7	0	0
27	9.1	7.0	6.8	6.4	7.9	12.3	14.1	10.7	8.5	9.9	11.0	10.7	9.0	9.6	13.1	8.5	10.1	13.9	16.3	22.5	13.2	11.1	10.9	10.8	24	22.5	6.4	11.0	0	0
28	8.4	9.2	8.9	7.8	8.1	20.7	22.4	28.9	19.1	14.2	11.8	12.3	15.9	12.5	6.5	5.7	5.3	5.3	5.3	4.7	4.4	5.3	5.2	4.7	24	28.9	4.4	10.5	0	0
29	4.2	4.2	4.3	M	4.5	4.6	4.4	5.1	4.5	4.6	4.7	4.6	4.9	4.5	4.4	4.3	4.7	4.7	5.1	6.9	8.4	5.5	14.2	30.9	23	30.9	4.2	6.4	0	0
30	23.6	18.4	19.1	15.0	17.1	17.2	16.4	29.4	19.4	11.9	11.0	8.7	14.6	16.3	21.5	21.2	20.8	27.1	29.2	26.9	24.0	18.6	15.8	13.5	24	29.4	8.7	19.0	0	0
31	17.8	15.9	59.0	43.9	15.5	23.9	15.5	15.1	20.1	21.2	21.2	23.2	25.4	23.3	24.3	23.2	20.4	17.6	17.7	24.3	48.6	28.4	16.1	13.8	24	59.0	13.8	24.0	0	0
Count	31	31	31	30	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	30	30.8		
Maximum	53.6	42.2	59.0	43.9	35.4	35.6	43.2	41.6	57.3	34.5	25.5	27.3	25.4	24.4	25.7	26.3	23.0	27.1	39.9	39.1	48.6	56.3	70.8	68.6	24	70.8	23.0	40.6		
Minimum	0.4	0.2	0.5	0.1	0.8	0.8	2.2	1.9	1.3	0.8	0.7	0.9	1.1	1.0	1.2	0.6	0.9	1.5	2.2	2.0	2.1	2.5	1.7	1.7	21	4.1	0.1	1.2		
Average	16.1	15.2	14.7	12.0	10.5	13.4	14.6	17.2	15.5	12.5	10.7	10.0	9.9	10.2	10.7	10.1	10.3	12.2	15.5	16.3	17.7	19.3	18.0	18.3	24	33	6	13.8		

												Maximum
Percentiles	10	20	30	40	50	60	70	80	90	95	99	100						70.8
																		28.4
Data	4.0	5.1	6.7	8.9	11.0	14.2	17.1	20.5	26.6	35.0	53.9	70.8						13.8

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

Figure B-1 Time History Plots of Measured Hourly Average and 24-Hour Average NO_2 Concentrations – Courtice (WPCP) Station



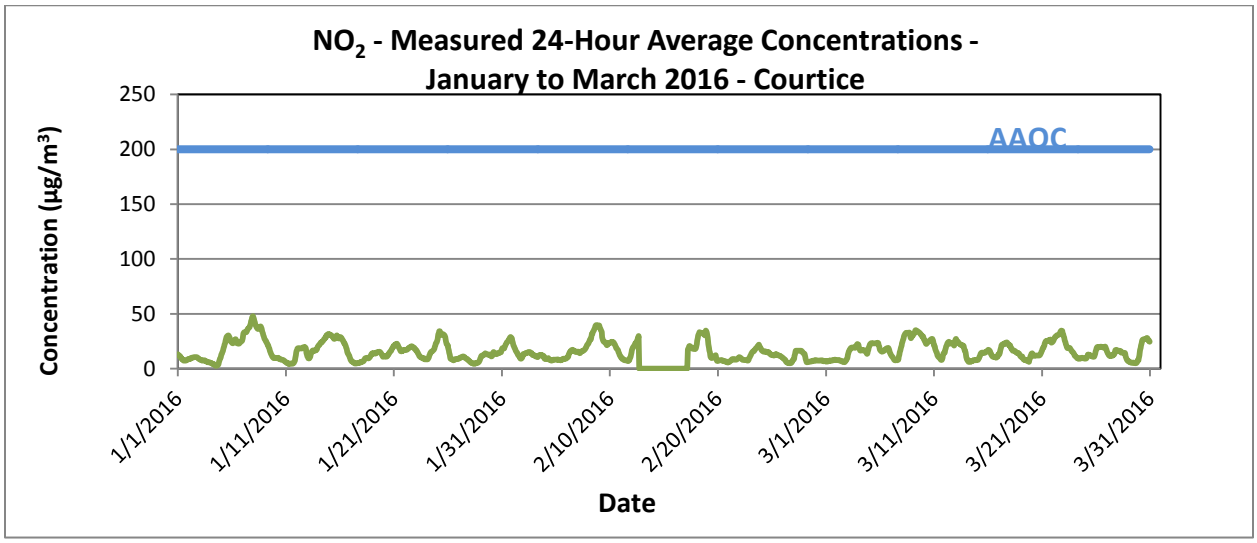
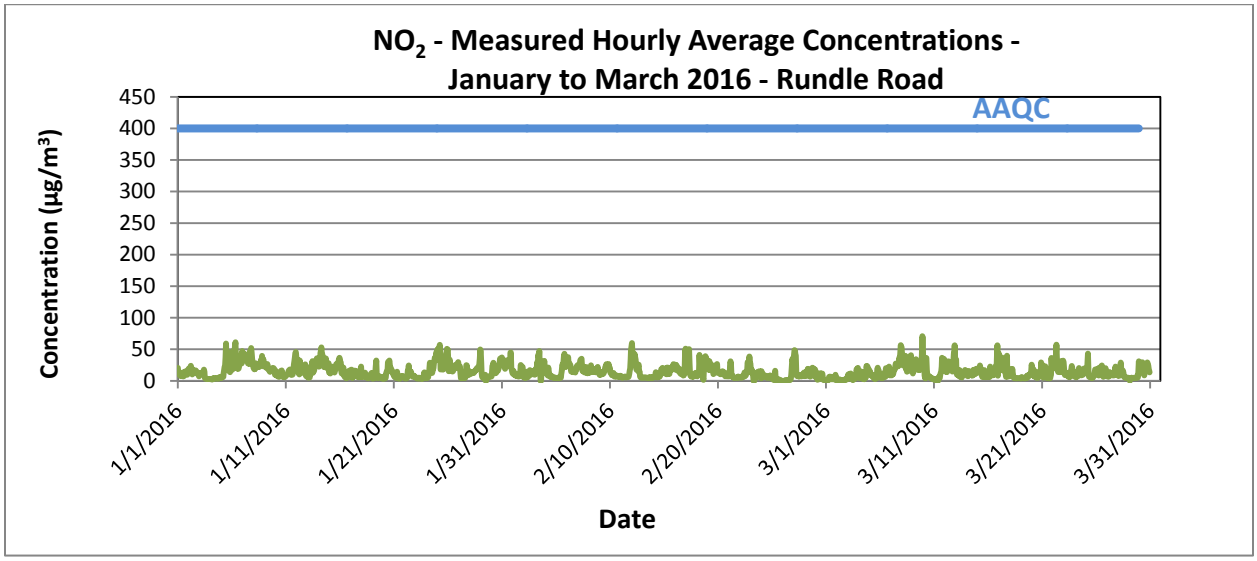
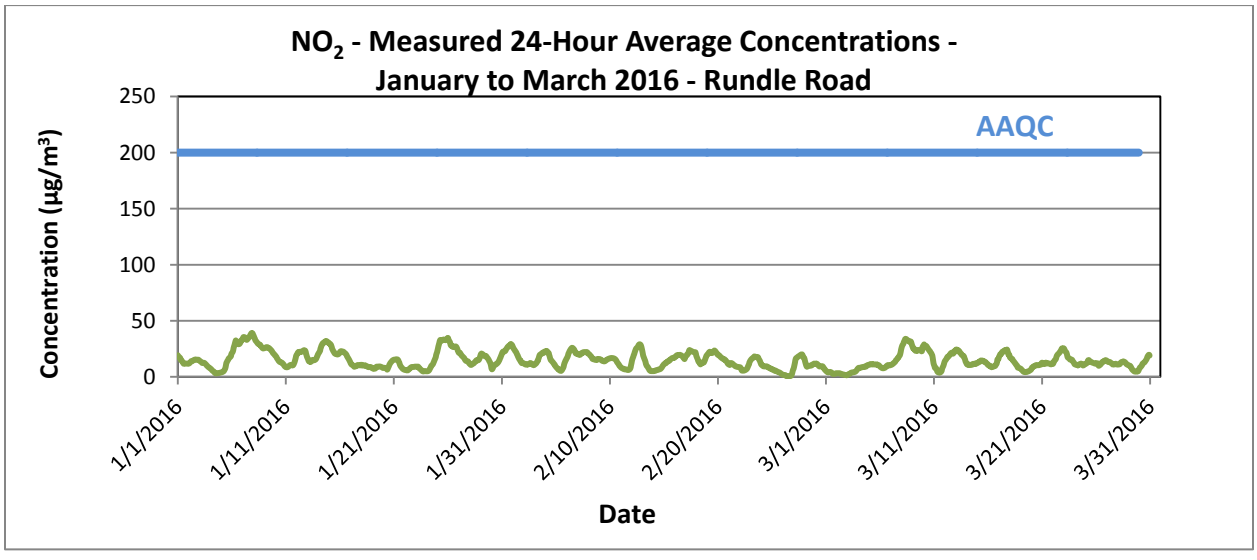


Figure B-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_2 Concentrations – Rundle Road Station





Appendix C NO_X DATA SUMMARIES AND TIME HISTORY PLOTS

NOx COURTICE
January 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	11.9	8.1	7.8	6.7	7.7	6.5	6.2	5.2	4.7	6.9	10.6	6.6	4.1	5.3	8.0	10.7	7.0	9.7	9.4	13.3	12.4	14.5	15.0	17.6	24	17.6	4.1	9.0	0	0
2	12.1	10.3	12.5	11.1	10.9	14.1	15.6	4.3	4.2	10.3	13.7	11.8	8.6	7.3	7.6	8.4	9.5	9.2	5.9	7.3	6.3	5.3	4.5	2.9	24	15.6	2.9	8.9	0	0
3	6.1	7.0	7.4	7.8	8.2	7.5	6.8	6.6	8.3	10.8	14.6	12.5	5.1	3.6	3.0	2.9	3.0	5.1	4.8	4.9	4.7	4.7	2.9	3.9	24	14.6	2.9	6.3	0	0
4	1.3	3.6	5.0	6.0	2.6	4.1	4.8	6.1	4.0	6.3	7.5	2.7	3.4	3.2	4.1	5.7	6.1	14.5	21.2	37.9	39.2	45.0	36.0	21.3	24	45.0	1.3	12.1	0	0
5	40.5	37.1	30.2	34.5	36.8	49.9	42.8	65.3	64.7	49.8	87.0	136.6	39.4	18.7	25.4	13.5	13.8	8.0	6.1	4.2	4.4	7.5	7.5	40.5	24	136.6	4.2	36.0	0	0
6	8.7	11.4	14.5	39.3	61.9	63.7	66.4	63.9	56.9	55.5	19.5	24.6	23.1	22.5	14.8	12.0	12.4	15.7	17.0	16.2	16.0	13.7	12.9	55.3	24	66.4	8.7	29.9	0	0
7	78.7	102.2	92.9	93.1	101.3	160.3	130.5	178.9	158.0	107.0	88.2	69.5	40.4	33.0	29.8	27.1	34.2	44.9	131.5	163.0	133.7	97.2	68.8	61.0	24	178.9	27.1	92.7	0	0
8	49.6	32.4	29.0	22.2	33.6	34.1	36.6	38.5	37.8	40.9	59.2	54.4	62.9	66.6	64.2	47.2	46.9	26.5	28.4	25.1	23.0	15.3	13.0	12.0	24	66.6	12.0	37.5	0	0
9	9.8	7.8	7.2	9.6	8.9	9.6	11.6	14.2	13.0	13.0	10.6	10.1	8.4	9.4	9.3	8.2	9.0	8.0	9.4	10.6	9.6	11.1	12.2	16.4	24	16.4	7.2	10.3	0	0
10	10.9	9.8	6.5	5.4	14.9	6.9	11.1	29.3	4.0	6.9	5.4	4.6	3.9	3.5	3.5	12.6	7.5	3.3	5.1	4.8	4.0	3.1	3.4	3.5	24	29.3	3.1	7.3	0	0
11	2.0	1.9	2.5	2.8	3.1	4.9	6.1	6.8	8.4	10.9	11.2	7.7	6.7	6.5	6.5	6.6	9.7	13.3	19.0	18.1	34.3	59.7	98.9	70.6	24	98.9	1.9	17.4	0	0
12	42.0	31.9	30.5	10.8	4.6	4.0	4.1	5.0	6.5	8.5	9.3	5.2	6.3	11.6	19.5	16.5	14.0	13.1	10.6	23.4	13.4	15.0	8.9	7.7	24	42.0	4.0	13.4	0	0
13	12.2	10.0	9.0	7.9	9.7	14.3	20.9	53.0	41.5	34.2	45.4	33.3	13.9	12.4	9.4	11.8	15.8	15.4	19.6	20.2	17.4	37.3	37.2	26.2	24	53.0	7.9	22.0	0	0
14	30.0	14.7	16.8	30.1	24.6	31.6	36.2	44.1	55.9	82.3	68.1	55.3	49.2	37.6	34.4	25.0	21.2	26.0	74.8	23.3	36.8	50.7	37.8	32.0	24	82.3	14.7	39.1	0	0
15	22.7	20.1	21.4	18.9	26.3	23.8	34.2	38.7	45.0	53.0	38.3	18.4	48.1	65.2	58.4	61.3	69.2	48.5	28.7	35.0	23.9	35.4	31.1	54.0	24	69.2	18.4	38.3	0	0
16	38.9	23.2	20.8	7.4	5.2	6.9	10.8	13.2	15.5	12.8	7.6	7.6	5.2	3.8	4.4	5.4	5.1	3.5	5.1	4.1	8.7	9.1	6.1	4.2	24	38.9	3.5	9.8	0	0
17	5.4	5.9	8.0	3.6	1.1	2.1	4.6	2.3	4.6	7.9	5.7	4.8	4.5	5.6	12.6	8.9	5.9	7.5	6.2	7.8	6.1	12.0	10.5	12.6	24	12.6	1.1	6.5	0	0
18	11.4	11.6	5.2	5.3	6.6	14.6	19.3	25.9	27.1	15.9	8.1	9.5	8.4	8.6	4.6	5.3	9.7	11.9	20.6	22.5	22.3	27.4	39.8	29.6	24	39.8	4.6	15.5	0	0
19	22.1	8.4	6.7	7.5	6.4	12.0	18.1	23.6	32.6	32.5	15.7	11.1	6.4	10.6	9.8	11.1	12.4	7.1	9.7	9.4	9.7	11.0	10.5	10.8	24	32.6	6.4	13.1	0	0
20	7.5	10.2	9.2	6.0	13.8	8.5	16.8	18.8	43.6	34.2	44.7	27.3	15.8	29.3	42.7	29.1	18.1	16.7	23.7	34.9	35.1	26.3	23.4	22.1	24	44.7	6.0	23.2	0	0
21	33.3	18.8	12.6	14.7	13.9	21.4	18.5	22.1	23.4	11.5	8.6	6.1	5.3	2.9	3.3	4.8	8.3	19.7	45.5	37.1	43.3	39.1	22.5	38.4	24	45.5	2.9	19.8	0	0
22	26.2	28.7	9.7	18.3	21.8	22.5	24.4	34.8	34.1	29.4	14.2	13.7	7.7	9.2	17.9	12.0	8.3	12.3	21.1	25.7	43.0	27.5	14.5	14.8	24	43.0	7.7	20.5	0	0
23	13.1	11.3	4.9	3.2	4.7	4.1	5.9	8.1	16.5	10.8	5.5	5.0	5.4	2.4	2.6	5.8	4.5	23.1	19.3	24.0	16.0	31.6	19.6	7.8	24	31.6	2.4	10.6	0	0
24	5.9	8.9	5.3	8.7	30.6	19.9	33.9	35.8	43.8	34.7	27.2	19.0	5.2	7.6	13.2	15.4	14.3	26.5	57.3	62.9	55.0	79.5	32.1	18.2	24	79.5	5.2	27.5	0	0
25	28.5	62.6	63.4	90.1	82.9	68.0	37.4	8.6	8.4	9.4	14.3	21.5	19.2	10.4	7.9	7.8	8.4	9.7	9.5	9.9	12.9	9.9	10.3	11.3	24	90.1	7.8	25.9	0	0
26	11.4	9.0	6.0	5.6	5.9	4.9	4.8	4.8	4.9	5.9	5.2	5.1	7.6	12.2	14.7	14.3	15.2	13.1	13.9	12.0	11.5	11.0	14.0	15.3	24	15.3	4.8	9.5	0	0
27	13.1	12.7	12.4	13.3	14.9	5.1	8.6	10.3	13.5	12.8	7.4	6.1	5.5	4.6	5.5	5.3	3.4	8.0	10.5	8.5	2.8	2.1	1.8	3.6	24	14.9	1.8	8.0	0	0
28	4.5	3.4	2.5	3.2	3.4	5.1	5.6	5.3	5.4	4.8	5.2	5.9	7.1	7.6	8.2	8.8	9.4	10.0	10.7	10.6	10.5	12.5	16.8	26.3	24	26.3	2.5	8.0	0	0
29	37.3	33.9	28.8	15.3	10.1	6.7	4.9	C	C	C	C	C	4.7	5.6	5.4	4.2	6.6	9.5	8.6	9.7	15.2	12.2	18.3	18.8	19	37.3	4.2	13.5	0	0
30	16.6	27.4	34.4	32.2	40.5	32.1	3.8	5.4	5.8	5.8	7.4	8.4	8.7	9.0	9.5	8.0	7.6	8.6	11.5	18.5	19.3	13.6	13.4	70.8	24	70.8	3.8	17.4	0	0
31	91.3	64.5	47.2	49.8	58.4	39.8	46.8	49.0	49.0	32.9	34.6	38.9	33.9	23.4	16.7	14.5	39.8	41.5	34.7	34.4	8.5	5.6	4.5	3.6	24	91.3	3.6	36.0	0	0
Count	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	739	31	30	30.8		
Maximum	91.3	102.2	92.9	93.1	101.3	160.3	130.5	178.9	158.0	107.0	88.2	136.6	62.9	66.6	64.2	61.3	69.2	48.5	131.5	163.0	133.7	97.2	98.9	70.8	24	178.9	48.5	104.5		
Minimum	1.3	1.9	2.5	2.8	1.1	2.1	3.8	2.3	4.0	4.8	5.2	2.7	3.4	2.4	2.6	2.9	3.0	3.3	4.8	4.1	2.8	2.1	1.8	2.9	19	12.6	1.1	2.9		
Average	22.7	20.9	18.4	19.1	21.8	22.9	22.5	27.6	28.0	25.3	23.3	21.4	15.3	14.8	15.4	13.9	14.7	15.8	22.6	23.8	22.6	24.1	20.9	23.6	24	53	6	21		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													178.9
													92.7
Data	4.6	5.9	7.8	9.6	12.1	15.2	22.5	33.7	46.9	64.2	121.6	178.9	20.8

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx COURTICE
February 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	2.9	4.7	8.2	10.9	6.0	7.0	10.0	8.6	10.2	8.5	7.1	8.1	5.6	4.1	4.2	10.5	6.6	15.8	25.1	34.9	21.7	14.6	45.8	36.1	24	45.8	2.9	13.2	0	0
2	14.6	7.2	11.1	15.2	8.8	13.4	15.2	16.7	11.9	5.4	5.4	9.5	25.8	4.5	0.9	2.2	5.9	23.8	9.9	18.6	13.3	18.4	57.6	27.2	24	57.6	0.9	14.3	0	0
3	8.8	8.4	4.9	4.6	8.7	21.0	6.4	8.1	21.7	23.0	21.8	A	A	A	3.8	3.7	3.9	5.0	6.1	8.0	10.7	11.7	10.6	6.1	21	23.0	3.7	9.9	0	0
4	3.7	3.3	3.8	4.9	8.5	9.6	13.1	19.1	12.7	6.7	6.2	5.6	3.1	4.7	3.3	3.8	6.7	12.2	14.9	8.6	12.5	13.8	12.0	6.8	24	19.1	3.1	8.3	0	0
5	6.7	6.7	3.1	6.6	5.0	13.8	9.3	13.6	16.8	5.2	2.9	3.8	6.8	7.3	20.0	13.1	10.6	10.2	9.8	16.0	12.5	10.1	12.3	11.3	24	20.0	2.9	9.7	0	0
6	12.5	12.6	15.3	20.2	38.6	33.2	36.6	33.2	25.3	24.4	17.1	13.5	11.2	8.1	6.9	6.8	7.4	6.7	6.7	5.4	5.4	10.0	12.4	14.0	24	38.6	5.4	16.0	0	0
7	15.3	14.0	14.7	15.0	15.7	17.6	46.7	61.0	58.6	48.4	22.1	10.8	13.7	12.9	10.5	16.6	16.9	15.0	35.6	18.4	31.2	55.4	21.9	22.5	24	61.0	10.5	25.4	0	0
8	33.6	48.1	52.4	41.4	43.3	46.2	40.2	135.7	89.8	61.6	77.7	40.7	47.7	52.0	61.2	55.0	57.9	50.6	22.2	22.5	28.1	54.9	22.9	30.6	24	135.7	22.2	50.7	0	0
9	38.5	12.7	16.9	9.8	12.4	13.1	16.5	19.9	23.3	21.1	27.6	30.7	42.0	57.7	43.0	21.3	20.0	23.1	34.2	51.0	41.5	44.3	36.5	35.9	24	57.7	9.8	28.9	0	0
10	31.6	16.2	17.9	26.0	11.2	13.0	11.3	13.1	13.8	13.8	12.7	2.6	7.7	7.7	8.4	10.2	10.2	10.5	9.5	9.2	8.9	10.0	6.7	11.7	24	31.6	2.6	12.3	0	0
11	9.7	9.0	7.8	4.1	8.3	7.1	6.5	8.5	7.2	9.5	9.5	6.6	5.0	6.4	6.2	6.6	5.4	10.0	14.7	17.5	56.6	26.0	23.8	49.9	24	56.6	4.1	13.4	0	0
12	83.7	60.3	41.6	21.5	27.5	17.6	15.3	37.2	27.0	23.9	10.5	M	M	M	M	M	M	M	M	M	M	M	M	M	11	83.7	10.5		0	0
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0					
16	M	M	M	M	M	M	M	M	M	M	M	M	23.5	17.6	17.4	18.4	16.7	12.1	13.2	12.4	16.1	16.5	33.5	22.3	12	33.5	12.1		0	0
17	15.5	10.1	10.2	15.5	35.3	31.9	28.3	39.5	56.3	43.1	13.2	11.5	9.2	8.1	9.5	7.7	8.0	12.1	9.9	12.0	14.1	21.5	35.1	40.4	24	56.3	7.7	20.7	0	0
18	48.0	124.9	129.8	152.1	154.9	69.9	59.2	111.4	69.5	21.0	33.2	19.0	4.1	0.7	1.2	1.0	0.0	1.1	0.0	1.8	80.7	110.4	33.5	2.7	24	154.9	0.0	51.2	0	0
19	2.9	2.1	3.1	3.1	3.2	2.1	2.0	2.5	4.6	7.0	11.1	20.9	8.2	6.4	8.4	15.6	16.8	5.0	6.8	8.0	12.2	23.0	5.9	4.3	24	23.0	2.0	7.7	0	0
20	4.6	5.7	7.0	4.5	4.5	3.4	3.1	3.4	5.2	5.1	5.8	7.2	6.8	6.4	4.4	5.3	6.0	6.5	6.7	5.8	7.1	8.5	7.6	5.7	24	8.5	3.1	5.7	0	0
21	6.2	11.7	11.3	14.0	13.5	16.3	11.2	11.2	17.3	4.2	4.7	2.5	3.6	2.3	2.1	5.5	6.5	8.4	12.9	18.6	11.4	15.9	29.4	12.7	24	29.4	2.1	10.6	0	0
22	8.3	6.2	5.6	3.9	3.6	4.0	10.3	8.3	5.9	4.9	4.7	3.5	1.9	1.3	2.4	1.7	3.1	5.7	4.4	15.4	40.8	49.3	53.4	34.4	24	53.4	1.3	11.8	0	0
23	34.3	29.9	27.1	20.1	22.6	18.7	14.3	14.7	13.3	26.6	C	C	21.8	17.5	9.6	10.1	13.9	20.6	28.3	21.9	15.4	18.7	26.4	16.7	22	34.3	9.6	20.1	0	0
24	19.9	14.8	13.5	11.5	17.0	12.0	16.2	21.8	23.6	15.8	16.7	17.7	12.0	11.6	14.1	12.2	12.8	13.4	10.3	15.4	8.9	9.0	11.6	14.4	24	23.6	8.9	14.4	0	0
25	11.6	18.9	15.3	8.3	6.7	13.6	24.5	24.8	29.1	9.9	24.1	8.3	5.9	5.1	7.7	7.9	6.6	8.4	7.2	4.7	5.5	4.4	4.2	7.5	24	29.1	4.2	11.3	0	0
26	5.3	5.4	3.1	2.7	4.5	5.2	7.3	7.3	6.9	5.9	8.4	4.3	5.4	5.4	4.6	4.4	5.5	6.8	12.0	18.6	13.2	25.8	19.4	15.2	24	25.8	2.7	8.4	0	0
27	9.8	22.9	68.2	49.5	52.8	32.3	8.5	4.4	3.8	5.5	6.4	6.8	5.3	4.6	3.8	4.5	4.4	5.5	5.2	5.0	5.7	6.8	8.0	8.8	24	68.2	3.8	14.1	0	0
28	6.1	6.2	6.0	5.7	6.6	5.7	6.0	8.6	8.7	7.8	7.2	8.1	5.9	5.6	5.9	5.5	5.6	4.2	13.0	16.1	8.0	6.1	7.6	7.6	24	16.1	4.2	7.2	0	0
29	21.4	8.5	3.3	3.3	5.5	4.4	6.1	5.9	8.7	7.0	12.2	10.5	9.7	4.8	5.6	4.9	5.4	6.0	6.3	4.4	6.1	9.2	6.8	7.5	24	21.4	3.3	7.2	0	0
30																									0					
31																									0					
Count	25	25	25	25	25	25	25	25	25	25	24	22	24	24	25	25	25	25	25	25	25	25	25	25	594	25	22	24.8		
Maximum	83.7	124.9	129.8	152.1	154.9	69.9	59.2	135.7	89.8	61.6	77.7	40.7	47.7	57.7	61.2	55.0	57.9	50.6	35.6	51.0	80.7	110.4	57.6	49.9	24	154.9	35.6	79.0		
Minimum	2.9	2.1	3.1	2.7	3.2	2.1	2.0	2.5	3.8	4.2	2.9	2.5	1.9	0.7	0.9	1.0	0.0	1.1	0.0	1.8	5.4	4.4	4.2	2.7	0	8.5	0.0			
Average	18.2	18.8	20.1	19.0	21.0	17.3	17.0	25.5	22.9	16.6	15.4	11.5	12.2	10.9	10.6	10.2	10.5	12.0	13.0	14.8	19.5	23.8	21.8	18.1	19	46	6	16.7		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													154.9
													51.2
Data	4.2	5.5	6.7	8.3	10.4	13.1	16.5	22.5	37.0	52.6	110.5	154.9	16.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx COURTICE
March 2016
(µg/m³)

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	8.2	8.2	5.8	8.3	9.9	7.6	8.1	10.9	13.6	19.0	8.2	9.2	8.0	8.0	13.0	13.8	11.3	9.7	8.2	8.1	9.0	8.6	5.5	7.4	24	19.0	5.5	9.5	0	0
2	8.4	8.0	4.7	3.2	5.1	8.3	6.4	7.3	8.9	6.3	6.4	7.0	5.0	5.8	5.8	7.5	8.8	10.2	13.6	18.6	22.0	20.4	28.3	28.6	24	28.6	3.2	10.6	0	0
3	35.8	62.0	65.1	32.2	31.0	29.8	15.9	29.0	24.3	14.6	7.2	5.5	7.9	3.9	3.5	7.8	6.1	7.4	48.9	32.0	42.0	41.3	31.7	26.0	24	65.1	3.5	25.5	0	0
4	29.1	15.4	11.8	10.5	15.5	18.7	23.5	29.6	22.0	9.7	11.9	2.9	2.4	2.1	1.0	1.5	1.4	1.6	2.3	4.6	61.0	123.8	110.8	92.6	24	123.8	1.0	25.2	0	0
5	88.7	38.9	34.8	25.2	25.5	21.0	18.4	24.2	22.7	9.4	3.5	2.8	2.6	2.7	2.6	2.6	2.7	3.0	3.7	12.4	45.0	36.9	36.0	37.8	24	88.7	2.6	21.0	0	0
6	24.2	34.6	17.2	16.5	19.8	21.2	25.7	29.8	27.3	24.8	16.0	11.9	9.8	23.8	15.8	8.0	7.5	5.4	5.4	6.6	6.6	4.6	4.2	5.5	24	34.6	4.2	15.5	0	0
7	4.2	5.1	5.4	5.7	5.2	5.5	5.3	6.7	9.2	12.1	13.5	16.2	16.2	15.6	13.7	12.4	13.8	16.3	77.2	70.1	74.8	56.5	40.7	35.6	24	77.2	4.2	22.4	0	0
8	67.6	63.7	55.8	40.7	48.8	50.9	35.3	39.7	32.1	23.4	20.2	20.9	18.4	17.9	17.4	15.4	15.4	22.0	35.2	17.6	20.0	37.0	60.8	70.7	24	70.7	15.4	35.3	0	0
9	68.5	89.6	80.9	72.4	102.9	135.1	160.6	98.1	29.3	12.3	11.2	9.8	8.5	8.4	5.6	6.1	7.5	7.4	8.3	8.2	9.4	32.6	23.8	166.8	24	166.8	5.6	48.5	0	0
10	108.4	13.1	31.4	70.7	49.3	31.8	27.0	92.6	79.7	29.9	28.8	24.6	16.4	15.3	22.2	19.4	16.8	18.3	16.3	16.2	13.2	13.3	10.6	7.2	24	108.4	7.2	32.2	0	0
11	7.1	6.4	5.5	6.6	9.4	5.6	8.0	10.3	8.9	8.4	C	C	C	3.3	3.5	9.6	9.5	15.0	24.4	80.9	148.6	94.1	14.5	4.2	21	148.6	3.3	23.0	0	0
12	57.4	77.2	75.7	67.0	45.1	35.0	34.2	33.0	15.8	18.2	14.2	16.8	14.0	15.8	9.2	8.2	8.4	6.7	21.8	52.9	61.1	12.6	110.9	97.7	24	110.9	6.7	37.9	0	0
13	104.4	56.5	22.9	7.1	28.6	23.3	10.6	9.5	8.6	6.1	4.0	2.2	5.3	5.0	5.0	9.9	7.2	4.3	6.2	8.7	9.5	12.1	17.7	11.6	24	104.4	2.2	16.1	0	0
14	7.2	4.8	5.8	9.3	4.7	4.0	9.3	7.4	14.7	8.9	9.1	9.4	9.6	10.3	10.8	14.1	12.5	7.7	10.8	9.6	7.6	9.2	18.5	13.0	24	18.5	4.0	9.5	0	0
15	7.8	6.9	10.7	20.9	30.7	37.4	31.7	37.4	57.5	26.2	19.2	12.4	11.2	7.6	7.9	5.0	12.5	15.7	16.5	14.0	17.6	14.2	24.1	19.1	24	57.5	5.0	19.3	0	0
16	18.4	19.8	8.1	10.8	17.0	6.7	12.5	14.9	7.0	5.6	7.5	8.5	5.9	5.6	5.7	7.0	11.1	6.2	6.3	23.8	38.4	17.3	38.5	58.4	24	58.4	5.6	15.0	0	0
17	16.1	19.6	54.5	77.8	48.8	105.5	130.5	34.3	10.6	7.4	7.3	7.8	8.5	24.1	15.1	15.4	11.7	5.6	11.9	17.2	11.9	15.5	16.4	35.3	24	130.5	5.6	29.5	0	0
18	24.1	19.5	15.1	19.4	33.9	48.7	36.3	18.3	8.3	9.0	8.6	6.5	5.0	3.9	4.8	5.0	5.7	9.5	7.0	10.2	8.4	9.0	6.6	5.3	24	48.7	3.9	13.7	0	0
19	6.9	4.3	9.9	28.0	42.6	12.2	17.1	6.4	2.2	4.4	2.8	0.7	0.4	0.4	0.0	0.0	0.4	0.8	0.7	3.3	51.3	50.5	47.0	52.1	24	52.1	0.0	14.4	0	0
20	28.6	22.5	18.6	9.9	9.7	11.0	6.7	7.6	9.0	4.6	2.5	1.3	1.2	0.7	0.4	0.0	0.7	0.4	1.0	11.8	76.0	82.7	71.5	81.2	24	82.7	0.0	19.1	0	0
21	53.4	54.4	57.2	10.7	27.0	42.5	55.2	53.2	25.4	8.1	6.6	6.9	4.2	4.9	4.6	4.4	5.2	5.5	10.2	13.5	24.5	35.8	91.7	79.0	24	91.7	4.2	28.5	0	0
22	106.8	88.0	70.1	51.7	51.5	76.0	122.7	72.5	49.0	20.9	11.1	11.2	7.5	9.2	9.0	26.8	22.4	30.3	32.8	22.5	14.3	33.4	26.1	41.5	24	122.7	7.5	42.0	0	0
23	33.2	28.9	16.1	17.4	16.5	19.0	19.3	15.6	15.7	13.4	13.0	11.6	12.4	8.8	8.0	2.6	3.7	13.9	11.5	16.5	16.0	10.9	16.4	13.4	24	33.2	2.6	14.7	0	0
24	12.9	14.2	6.2	7.2	7.8	7.5	5.8	11.5	14.9	11.3	9.3	11.5	11.1	12.6	13.7	16.2	15.3	10.1	10.6	10.0	13.9	16.0	14.3	11.9	24	16.2	5.8	11.5	0	0
25	9.4	10.4	12.1	14.8	33.1	35.7	29.4	13.7	6.9	8.3	5.3	5.2	4.5	5.1	4.4	9.0	5.2	4.6	8.0	9.7	18.7	41.3	63.7	67.4	24	67.4	4.4	17.7	0	0
26	61.9	45.0	37.6	34.2	30.5	24.5	39.4	38.9	22.4	10.8	9.0	2.7	2.6	1.9	2.5	2.1	2.2	3.5	16.4	13.1	31.4	38.5	20.2	42.9	24	61.9	1.9	22.3	0	0
27	15.2	10.6	10.8	21.0	11.9	12.0	15.7	17.3	52.5	9.4	4.0	4.5	6.6	10.4	14.9	5.4	9.3	36.3	67.1	43.8	35.8	35.5	16.2	12.2	24	67.1	4.0	19.9	0	0
28	5.9	22.9	10.9	8.3	12.8	18.7	9.6	6.5	3.6	4.0	3.9	3.0	4.5	9.9	7.5	6.5	8.4	5.8	6.7	6.9	7.8	8.0	7.0	6.5	24	22.9	3.0	8.1	0	0
29	7.3	4.3	4.0	9.3	7.9	8.6	8.1	5.9	5.5	5.9	5.2	4.0	4.4	3.7	3.6	3.7	10.6	6.1	10.6	24.9	37.3	15.7	12.9	58.6	24	58.6	3.6	11.2	0	0
30	89.6	85.7	69.2	111.1	80.5	101.8	91.7	65.8	19.2	13.8	9.2	6.4	6.5	8.8	6.7	7.5	8.6	21.3	9.1	6.3	3.6	3.6	19.1	22.1	24	111.1	3.6	36.1	0	0
31	27.6	26.2	11.6	5.1	9.9	7.0	3.1	3.7	4.8	5.7	5.6	4.9	4.7	3.8	3.8	4.2	3.0	3.6	2.9	3.5	6.1	9.4	2.8	3.2	24	27.6	2.8	6.9	0	0
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	741	31	30	30.9		
Maximum	108.4	89.6	80.9	111.1	102.9	135.1	160.6	98.1	79.7	29.9	28.8	24.6	18.4	24.1	22.2	26.8	22.4	36.3	77.2	80.9	148.6	123.8	110.9	166.8	24	166.8	18.4	79.5		
Minimum	4.2	4.3	4.0	3.2	4.7	4.0	3.1	3.7	2.2	4.0	2.5	0.7	0.4	0.4	0.0	0.0	0.4	0.4	0.7	3.3	3.6	3.6	2.8	3.2	21	16.2	0.0	2.5		
Average	36.9	31.2	27.3	26.9	28.2	31.4	33.0	27.5	20.4	12.0	9.5	8.3	7.5	8.4	7.8	8.3	8.5	10.1	16.5	19.3	30.4	30.3	32.5	39.2	24	73	4	21.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													166.8
													48.5
Data	4.0	5.8	7.6	9.3	11.7	15.5	20.4	31.7	54.4	77.2	111.0	166.8	21.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

NOx January ($\mu g/m^3$) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	20.2	12.6	11.3	11.9	12.9	8.9	7.4	10.6	9.0	10.9	14.9	8.7	8.2	8.1	12.4	15.6	13.7	14.5	15.1	12.1	10.9	9.7	11.7	15.8	24	20.2	7.4	12.0	0	0
2	18.8	18.7	20.6	18.7	20.1	24.2	20.9	10.9	9.9	14.8	19.4	16.4	14.6	13.7	13.1	13.7	16.9	13.7	11.5	13.4	11.5	12.4	12.8	6.8	24	24.2	6.8	15.3	0	0
3	11.4	10.9	11.1	12.2	13.0	12.4	10.8	10.5	12.1	15.3	19.3	16.5	5.5	3.5	3.1	2.9	2.8	3.2	2.9	2.5	2.2	2.5	2.6	2.4	24	19.3	2.2	8.0	0	0
4	2.3	2.3	2.2	2.1	2.4	2.1	4.5	3.4	4.3	5.6	6.4	5.1	5.2	4.3	4.6	5.0	6.1	4.5	3.2	4.0	4.7	5.8	5.6	4.4	24	6.4	2.1	4.2	0	0
5	5.5	6.7	4.5	6.2	7.8	6.1	12.5	19.9	29.1	32.6	71.1	123.0	69.5	29.3	39.6	25.5	26.0	21.5	16.8	15.9	14.7	17.6	19.1	46.1	24	123.0	4.5	27.8	0	0
6	28.6	17.7	25.4	39.4	48.5	45.6	46.2	62.4	99.5	72.2	38.9	30.8	30.5	31.0	26.1	23.5	28.3	28.1	31.3	31.1	35.7	44.1	27.8	47.2	24	99.5	17.7	39.2	0	0
7	45.0	43.5	44.0	40.6	57.5	51.6	44.2	54.1	67.8	60.5	55.4	58.3	41.5	48.1	43.2	32.1	68.1	76.8	48.2	63.7	48.7	35.7	30.5	28.2	24	76.8	28.2	49.5	0	0
8	21.7	19.9	18.4	19.2	19.2	19.8	31.3	30.0	27.0	24.7	28.1	32.7	32.0	28.9	31.3	31.2	27.7	46.4	29.2	47.8	41.2	25.6	43.6	23.8	24	47.8	18.4	29.2	0	0
9	30.6	34.9	24.7	24.9	25.7	26.2	20.3	32.4	22.5	19.7	19.5	18.4	16.5	15.5	16.6	17.5	17.1	21.8	17.4	21.8	20.7	21.7	19.5	15.3	24	34.9	15.3	21.7	0	0
10	9.0	24.0	9.8	12.5	9.7	7.2	7.9	7.3	6.1	9.7	8.2	7.6	16.4	12.8	10.1	17.6	8.8	6.2	6.6	6.3	6.8	5.5	6.0	7.7	24	24.0	5.5	9.6	0	0
11	8.8	8.3	8.6	10.5	10.7	12.4	15.5	17.0	18.7	21.8	17.8	14.1	12.3	12.3	11.9	11.3	17.0	18.7	25.6	31.0	36.6	43.6	46.3	42.2	24	46.3	8.3	19.7	0	0
12	31.3	24.8	30.5	50.4	13.5	13.0	11.3	37.8	16.2	21.9	21.3	15.1	18.4	23.0	24.4	19.2	22.1	21.2	18.4	26.5	10.0	7.8	9.4	7.5	24	50.4	7.5	20.6	0	0
13	5.6	6.4	5.3	6.3	7.5	5.4	18.4	20.6	25.9	25.4	39.6	48.9	17.8	20.3	20.0	21.3	26.4	23.4	28.9	32.2	30.0	36.2	32.5	29.0	24	48.9	5.3	22.2	0	0
14	25.5	22.7	22.6	26.0	27.9	44.3	48.3	56.5	52.7	67.0	67.0	49.0	53.2	34.0	32.0	26.8	29.7	36.4	26.3	24.4	19.7	27.4	24.3	32.3	24	67.0	19.7	36.5	0	0
15	12.8	21.3	31.4	11.8	22.9	16.0	18.4	22.7	24.7	33.4	19.7	16.6	16.4	18.8	22.0	24.2	27.9	22.3	24.3	23.4	26.8	33.6	47.8	49.2	24	49.2	11.8	24.5	0	0
16	38.3	31.7	30.2	15.7	12.4	12.7	17.7	21.2	21.2	12.9	7.6	6.7	6.1	5.1	4.3	5.6	5.6	5.5	5.8	5.5	9.9	16.0	15.8	12.9	24	38.3	4.3	13.6	0	0
17	9.5	13.4	18.2	10.5	4.5	5.4	10.7	7.0	10.4	16.8	11.9	10.8	11.8	12.3	16.9	6.5	6.2	6.5	5.6	5.2	8.4	12.7	17.2	22.4	24	22.4	4.5	10.9	0	0
18	14.4	8.4	5.5	5.8	6.9	6.9	9.8	12.5	16.5	10.9	7.8	10.1	8.1	6.6	5.9	4.7	6.1	8.6	8.4	8.5	6.5	9.5	12.2	12.2	24	16.5	4.7	8.9	0	0
19	5.6	3.0	6.9	4.1	3.9	4.9	10.6	17.5	28.0	43.3	12.8	5.7	6.6	7.3	6.0	7.2	8.9	6.7	4.6	4.8	5.3	6.9	4.8	3.8	24	43.3	3.0	9.1	0	0
20	2.6	4.5	6.7	5.4	4.9	3.9	4.6	14.0	16.1	16.0	22.3	37.7	29.6	39.4	43.9	30.0	22.5	21.3	18.2	17.2	16.3	12.8	11.8	11.1	24	43.9	2.6	17.2	0	0
21	7.8	6.5	6.1	4.8	4.1	5.7	9.7	18.9	12.5	7.5	4.9	4.1	3.7	5.1	4.9	5.1	7.5	9.5	7.2	5.9	9.5	5.8	5.7	5.1	24	18.9	3.7	7.0	0	0
22	5.2	4.0	3.6	3.5	3.5	4.0	5.9	17.7	16.3	31.0	11.8	13.7	21.3	10.8	19.1	12.8	10.7	9.2	7.5	6.3	7.9	7.5	7.0	6.8	24	31.0	3.5	10.3	0	0
23	5.7	5.2	4.9	3.6	3.3	3.5	3.6	4.3	5.2	4.2	3.9	4.3	3.9	3.4	4.0	3.2	3.1	4.1	5.1	13.9	14.1	4.9	6.2	4.3	24	14.1	3.1	5.1	0	0
24	4.0	4.5	4.4	4.7	5.2	10.6	10.5	19.1	31.2	26.2	30.9	31.7	15.0	13.5	18.0	24.2	20.5	27.6	32.5	37.2	37.5	36.4	45.7	38.3	24	45.7	4.0	22.1	0	0
25	33.5	75.7	56.9	42.9	44.5	57.6	66.8	39.7	19.0	19.5	26.4	33.6	30.7	21.3	22.2	22.7	22.9	30.7	29.8	34.5	47.9	49.1	53.3	54.7	24	75.7	19.0	39.0	0	0
26	51.7	36.8	15.5	24.1	39.3	18.6	26.0	16.2	18.8	17.7	15.6	17.0	18.1	24.4	23.3	22.8	26.5	25.9	26.5	23.1	21.8	20.6	26.9	30.6	24	51.7	15.5	24.5	0	0
27	23.4	22.2	20.9	22.9	11.2	3.5	4.1	5.0	12.4	10.6	7.7	5.7	5.9	5.3	6.2	5.9	12.9	25.4	24.5	18.5	18.5	15.2	10.6	13.8	24	25.4	3.5	13.0	0	0
28	21.9	16.7	15.4	14.7	17.6	12.5	13.2	16.9	16.6	14.0	14.6	16.0	18.6	18.6	19.7	21.1	22.4	18.9	21.8	22.8	24.7	27.2	27.5	35.4	24	35.4	12.5	19.5	0	0
29	55.0	48.1	29.0	14.0	6.7	4.9	4.9	4.8	5.2	5.6	4.8	21.9	C	C	7.2	6.3	5.8	6.3	6.3	6.2	6.5	7.8	6.9	6.4	22	55.0	4.8	12.3	0	0
30	6.8	7.1	12.2	23.8	25.0	28.9	16.7	14.0	16.7	13.3	16.5	15.8	20.2	20.9	19.1	17.5	20.9	19.4	25.2	29.7	36.0	29.5	26.3	29.6	24	36.0	6.8	20.5	0	0
31	38.1	35.8	32.6	30.4	25.1	25.8	22.8	19.9	29.4	47.9	44.3	35.9	41.5	30.4	34.5	29.2	25.3	31.5	28.0	46.2	46.4	19.9	17.1	13.0	24	47.9	13.0	31.3	0	0
Count	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	742	31	30	30.9		
Maximum	55.0	75.7	56.9	50.4	57.5	57.6	66.8	62.4	99.5	72.2	71.1	123.0	69.5	48.1	43.9	32.1	68.1	76.8	48.2	63.7	48.7	49.1	53.3	54.7	24	123.0	32.1	62.7		
Minimum	2.3	2.3	2.2	2.1	2.4	2.1	3.6	3.4	4.3	4.2	3.9	4.1	3.7	3.4	3.1	2.9	2.8	3.2	2.9	2.5	2.2	2.5	2.6	2.4	22	6.4	2.1	3.0		
Average	19.4	19.3	17.4	16.9	16.7	16.3	17.9	20.8	22.6	23.6	22.3	23.6	20.0	17.6	18.3	16.5	18.3	19.9	18.2	20.7	20.6	19.7	20.5	21.2	24	43	9	20		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	4.9	6.3	9.3	12.5	16.5	19.7	24.1	29.6	39.6	48.2	68.0	123.0

	Maximum
	123.0
	49.5
	19.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

NOx February (µg/m³) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	11.8	11.1	15.4	11.0	9.1	9.8	8.4	8.8	9.6	8.4	9.6	11.9	7.5	7.3	7.0	8.8	13.5	13.3	25.4	20.7	23.8	22.2	21.6	9.6	24	25.4	7.0	12.7	0	0
2	6.3	5.2	5.2	6.7	4.9	5.3	5.0	16.7	12.8	10.6	6.1	11.0	19.9	16.6	24.2	20.9	9.7	10.7	12.7	17.1	17.2	18.8	15.9	11.0	24	24.2	4.9	12.1	0	0
3	27.8	10.2	14.6	25.6	11.1	27.5	25.3	34.6	22.9	49.8	40.3	56.1	35.5	28.7	A	A	17.7	18.0	20.7	19.6	13.0	12.4	32.9	19.1	22	56.1	10.2	25.6	0	0
4	24.0	12.4	23.1	19.4	18.3	9.5	8.4	22.4	15.8	14.6	9.3	7.6	7.0	8.1	9.4	6.7	6.2	6.6	5.1	4.5	4.3	4.8	5.1	4.3	24	24.0	4.3	10.7	0	0
5	4.5	4.7	4.3	4.5	4.1	4.7	4.5	5.9	6.8	5.6	5.1	5.1	12.5	17.6	28.3	30.1	22.0	33.8	40.7	44.0	30.5	30.0	22.4	23.6	24	44.0	4.1	16.5	0	0
6	23.0	25.1	25.7	38.4	31.3	27.6	26.2	26.8	29.4	25.1	17.8	18.1	19.0	16.4	15.9	15.2	15.9	14.2	14.7	13.3	23.5	17.4	22.7	21.7	24	38.4	13.3	21.9	0	0
7	25.2	23.3	23.3	22.6	24.9	27.7	32.7	35.1	47.9	64.9	28.9	17.7	20.8	30.7	35.8	13.9	15.2	13.8	13.0	13.6	30.2	14.6	11.8	14.2	24	64.9	11.8	25.1	0	0
8	13.2	22.5	13.9	13.0	14.0	16.0	29.8	19.5	15.2	16.2	17.6	15.9	19.1	24.4	15.5	14.5	14.4	20.2	13.6	19.6	13.8	32.7	16.1	16.1	24	32.7	13.0	17.8	0	0
9	21.0	9.4	15.0	10.1	10.0	20.3	10.3	10.5	17.3	11.7	13.4	16.2	19.3	23.4	26.9	24.6	27.8	21.8	20.5	21.9	21.1	37.8	18.6	18.4	24	37.8	9.4	18.6	0	0
10	21.0	13.1	12.8	11.6	9.1	9.3	9.9	12.4	16.6	9.5	8.2	8.1	10.4	9.4	8.3	9.4	10.7	7.2	7.3	6.9	6.5	6.1	7.5	8.0	24	21.0	6.1	10.0	0	0
11	6.8	7.1	5.2	4.8	4.4	5.0	6.4	5.6	7.7	8.4	8.2	7.8	6.3	6.6	7.1	7.7	7.1	6.1	7.3	10.6	16.2	20.5	34.9	49.6	24	49.6	4.4	10.7	0	0
12	54.8	60.5	44.8	30.7	34.8	32.0	28.2	44.3	43.6	44.5	32.6	24.0	21.6	20.2	24.7	29.0	29.2	13.8	14.2	6.4	5.5	4.8	4.9	4.9	24	60.5	4.8	27.3	0	0
13	4.3	5.1	5.1	4.8	5.4	5.6	4.7	5.0	6.2	5.1	5.3	5.4	5.4	5.0	5.1	5.7	5.3	5.8	6.0	4.6	4.5	4.9	4.9	4.4	24	6.2	4.3	5.1	0	0
14	4.9	7.0	6.3	6.8	6.9	8.6	13.6	8.6	7.4	5.7	7.4	13.9	27.9	9.0	7.4	9.3	9.5	13.5	17.9	17.5	19.2	20.7	19.8	19.1	24	27.9	4.9	12.0	0	0
15	15.9	14.9	12.9	11.7	27.0	14.5	11.3	30.2	21.2	13.6	30.2	16.8	13.3	17.6	17.3	20.3	21.8	19.9	26.0	26.1	23.4	34.2	19.9	18.5	24	34.2	11.3	19.9	0	0
16	21.0	26.5	23.9	25.5	29.2	27.1	16.2	16.6	20.6	18.1	26.1	18.0	15.7	14.5	15.8	15.3	15.4	11.4	9.8	8.1	9.6	9.7	13.7	51.9	24	51.9	8.1	19.2	0	0
17	53.1	36.0	32.0	34.3	44.8	27.8	31.3	50.6	72.7	36.8	11.2	9.1	9.2	8.2	8.6	7.3	8.9	8.4	7.0	7.3	7.4	10.7	13.0	10.3	24	72.7	7.0	22.7	0	0
18	12.3	7.7	6.8	11.8	10.4	11.5	16.0	58.7	39.7	16.3	27.1	48.5	36.4	9.2	9.2	4.0	3.2	19.9	31.7	31.2	39.6	43.3	35.6	34.8	24	58.7	3.2	23.5	0	0
19	20.7	20.9	18.7	25.1	18.6	41.6	18.4	17.9	30.1	25.0	28.5	22.4	31.3	35.5	12.1	14.4	29.7	14.6	20.3	21.3	19.0	27.2	27.3	13.3	24	41.6	12.1	23.1	0	0
20	18.1	13.6	14.9	13.2	11.4	15.5	10.3	11.7	18.3	15.3	20.8	17.6	18.5	15.4	15.7	15.0	7.2	7.1	7.2	7.8	8.8	7.2	6.9	7.2	24	20.8	6.9	12.7	0	0
21	7.3	6.8	9.7	25.9	31.9	26.9	8.2	7.7	8.9	5.7	4.9	4.8	5.9	5.4	4.4	4.6	5.5	5.0	4.4	4.9	4.5	6.9	5.9	6.0	24	31.9	4.4	8.8	0	0
22	5.1	5.4	4.9	5.0	4.9	4.5	5.4	9.7	7.6	7.5	8.2	18.6	11.0	9.7	11.4	14.9	17.7	17.2	29.4	27.6	34.8	28.9	40.8	44.4	24	44.4	4.5	15.6	0	0
23	36.2	18.4	22.0	12.4	21.3	10.8	9.0	C	C	C	6.8	6.4	9.3	11.3	19.1	16.5	13.6	14.8	7.2	13.7	23.3	14.9	18.2	3.4	21	36.2	3.4	14.7	0	0
24	3.6	30.2	15.5	5.1	6.1	7.1	7.5	8.9	10.1	8.1	10.0	6.6	5.6	5.3	5.0	5.3	6.2	6.5	8.6	4.4	10.7	10.0	7.1	6.2	24	30.2	3.6	8.3	0	0
25	3.0	2.0	1.4	1.0	0.6	0.7	2.2	18.0	5.4	3.2	1.4	0.3	0.1	0.0	1.4	2.5	1.5	0.3	0.0	0.3	0.0	0.0	0.0	0.0	24	18.0	0.0	1.9	0	0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	1.9	0.7	1.0	1.3	2.3	2.0	1.7	2.2	1.2	1.3	2.9	10.6	21.9	34.5	31.6	36.6	24	36.6	0.0	6.5	0	0
27	17.0	42.0	48.6	48.2	42.7	39.4	13.2	8.3	11.6	10.9	10.8	15.2	8.7	12.9	8.9	10.7	8.5	9.2	6.6	6.7	8.2	10.5	11.5	12.1	24	48.6	6.6	17.6	0	0
28	9.5	6.4	8.7	9.0	7.6	22.0	8.1	17.4	25.8	11.0	8.5	11.2	15.6	7.2	8.8	10.7	12.3	13.3	20.1	11.4	23.5	26.4	7.8	6.4	24	26.4	6.4	12.9	0	0
29	23.0	8.7	5.1	15.2	6.2	1.1	1.3	2.9	3.5	3.1	6.0	11.0	15.9	11.5	14.7	15.5	12.7	4.9	1.2	0.8	0.4	0.0	0.0	0.3	24	23.0	0.0	6.9	0	0
30																									0					
31																									0					
Count	29	29	29	29	29	29	29	28	28	28	29	29	29	29	28	28	29	29	29	29	29	29	29	29	691	29	28	28.8		
Maximum	54.8	60.5	48.6	48.2	44.8	41.6	32.7	58.7	72.7	64.9	40.3	56.1	36.4	35.5	35.8	30.1	29.7	33.8	40.7	44.0	39.6	43.3	40.8	51.9	24	72.7	29.7	45.2		
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	1.9	0.7	1.0	0.3	0.1	0.0	1.4	2.2	1.2	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0	6.2	0.0			
Average	17.1	15.7	15.2	15.6	15.6	15.8	12.8	18.4	19.2	16.3	14.2	14.7	14.9	13.4	13.2	12.7	12.7	12.2	13.8	13.9	16.0	17.7	16.5	16.4	22	38	6	15.2		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													72.7
													27.3
Data	4.5	5.9	7.5	9.5	12.3	15.2	18.5	23.3	30.2	36.7	52.0	72.7	15.2

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

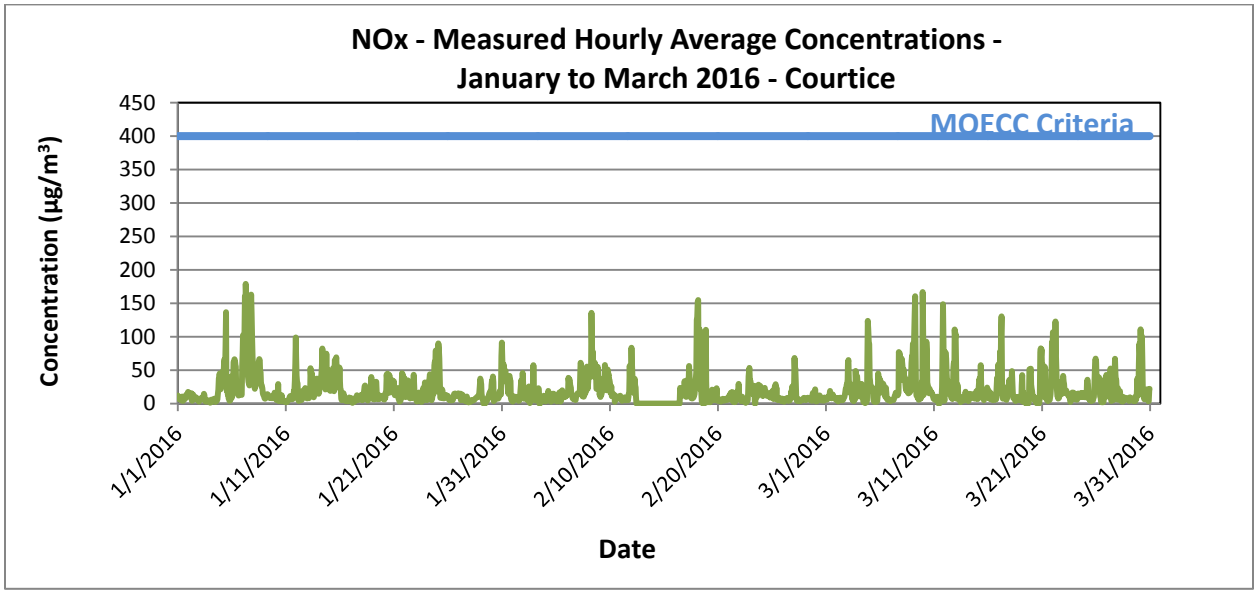
NOx March (µg/m³) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average	Hrs>400	Days>200
1	0.0	0.0	0.0	0.0	0.2	0.3	2.3	6.6	17.7	6.7	16.4	4.3	5.3	2.9	2.3	3.5	2.8	10.6	7.5	0.7	2.4	16.3	0.8	0.6	24	17.7	0.0	4.6	0	0
2	0.4	0.3	0.0	0.0	0.9	2.6	2.2	1.7	1.2	0.3	0.6	0.9	1.6	0.8	1.5	0.7	0.8	0.9	1.3	1.8	1.2	2.0	1.3	3.3	24	3.3	0.0	1.2	0	0
3	5.5	8.8	9.5	3.1	5.6	4.0	6.1	18.3	9.6	9.2	3.9	1.9	1.2	1.6	3.2	15.8	3.0	5.6	8.1	10.5	19.4	15.9	11.3	25.3	24	25.3	1.2	8.6	0	0
4	12.2	15.4	6.1	3.8	4.0	20.2	8.2	17.0	14.1	15.1	4.1	6.6	14.1	2.6	4.4	6.4	4.6	5.8	23.3	20.6	23.7	23.0	15.0	17.8	24	23.7	2.6	12.0	0	0
5	16.4	15.3	10.7	12.4	8.9	9.1	7.1	8.0	10.4	9.0	4.2	4.0	4.0	3.3	7.4	3.7	3.7	7.6	17.1	29.1	15.6	16.9	9.8	7.6	24	29.1	3.3	10.1	0	0
6	6.1	5.4	4.6	5.0	3.9	3.4	3.7	7.3	11.1	15.0	10.2	11.5	7.0	26.6	20.6	10.8	12.6	14.3	16.1	18.1	28.5	11.1	8.1	17.7	24	28.5	3.4	11.6	0	0
7	11.9	8.8	7.3	11.6	12.4	10.7	19.3	17.0	22.2	21.9	29.0	33.0	29.0	30.5	31.3	31.2	26.5	26.5	29.0	36.8	34.5	53.9	73.7	78.9	24	78.9	7.3	28.6	0	0
8	67.1	44.3	32.9	24.3	66.9	46.7	40.6	55.3	59.3	24.0	20.0	26.5	19.4	21.0	20.4	19.6	18.2	16.9	31.2	38.7	37.0	45.2	21.1	17.5	24	67.1	16.9	33.9	0	0
9	35.0	11.8	26.8	38.6	22.3	20.5	20.9	86.9	41.8	28.4	31.9	21.3	24.2	21.7	19.8	18.1	25.9	18.6	20.3	27.4	21.9	41.7	87.4	76.6	24	87.4	11.8	32.9	0	0
10	44.0	26.5	36.7	8.7	3.9	3.4	48.4	61.9	22.0	8.3	9.0	7.8	8.8	6.1	5.6	8.3	5.8	4.2	3.6	3.8	3.6	2.9	2.1	2.2	24	61.9	2.1	14.1	0	0
11	0.7	0.9	1.1	0.9	0.8	0.9	6.1	C	C	C	7.7	6.1	5.3	5.2	13.3	17.1	19.5	26.3	38.6	30.6	35.4	26.9	37.1	35.1	21	38.6	0.7	15.0	0	0
12	19.1	19.7	15.5	16.8	17.3	14.1	17.9	25.4	45.5	31.3	24.5	26.4	24.3	31.2	25.0	21.5	20.3	15.7	21.9	31.7	52.7	40.5	58.7	34.8	24	58.7	14.1	27.2	0	0
13	28.1	34.9	15.8	10.0	9.5	13.3	14.7	8.3	15.2	32.5	7.1	8.8	7.4	7.4	5.4	14.2	16.5	13.7	14.2	13.2	11.8	19.1	19.8	13.6	24	34.9	5.4	14.8	0	0
14	21.7	17.7	8.1	7.8	9.1	18.6	9.0	13.2	10.8	9.4	21.8	9.2	9.6	8.2	14.6	18.4	14.3	10.1	11.8	24.0	30.9	12.1	16.8	27.2	24	30.9	7.8	14.8	0	0
15	16.5	19.5	16.8	13.9	12.9	17.4	26.5	22.0	18.7	12.2	10.1	7.0	6.9	6.8	6.5	8.4	19.2	6.6	6.2	6.2	6.1	7.9	7.0	6.6	24	26.5	6.1	12.0	0	0
16	6.7	13.2	6.4	6.2	7.8	27.6	10.5	10.8	12.1	23.8	9.2	10.9	12.0	10.7	15.7	20.2	19.1	24.6	26.3	24.4	52.9	63.5	8.4	19.1	24	63.5	6.2	18.4	0	0
17	45.4	38.3	27.6	22.3	21.4	23.1	21.1	56.1	29.8	22.5	22.6	19.9	17.1	18.0	31.8	14.0	6.7	25.2	43.4	7.2	7.3	7.6	7.2	9.3	24	56.1	6.7	22.7	0	0
18	9.2	8.6	18.6	18.6	11.9	14.5	20.3	15.0	9.2	4.6	5.2	5.8	4.9	4.5	4.5	4.3	4.5	4.5	4.0	4.8	4.5	4.2	4.8	4.6	24	20.3	4.0	8.1	0	0
19	4.2	4.0	4.1	6.6	4.5	4.6	5.6	5.0	4.5	4.5	3.9	5.7	5.0	6.4	10.1	6.2	5.5	15.6	9.2	8.2	10.0	12.5	10.7	14.2	24	15.6	3.9	7.1	0	0
20	15.2	27.1	23.9	9.5	8.7	23.9	16.9	7.6	8.3	8.0	14.2	20.4	5.3	5.9	5.6	5.8	6.3	7.8	13.1	11.3	14.4	13.3	30.3	24.8	24	30.3	5.3	13.6	0	0
21	26.3	20.9	9.2	5.4	7.0	12.1	17.9	27.8	22.0	7.9	5.8	6.1	5.4	4.7	4.9	5.1	4.6	4.5	4.5	7.6	10.0	37.0	26.9	22.5	24	37.0	4.5	12.8	0	0
22	19.6	29.9	35.7	32.3	23.3	23.3	30.1	78.3	103.3	52.7	23.7	21.0	17.0	18.2	17.0	18.0	14.5	26.8	18.6	32.5	34.5	27.5	20.0	36.4	24	103.3	14.5	31.4	0	0
23	29.5	18.8	11.3	9.0	9.8	11.5	10.9	13.2	10.2	8.3	12.5	7.0	6.8	6.9	6.8	10.0	16.6	18.8	28.0	20.0	9.8	27.7	8.0	10.3	24	29.5	6.8	13.4	0	0
24	8.7	19.1	7.0	6.2	6.4	10.1	8.0	7.6	9.1	27.8	41.6	13.0	10.8	10.4	19.5	10.1	10.1	10.1	9.6	10.3	17.4	25.1	18.4	20.1	24	41.6	6.2	14.0	0	0
25	16.3	16.3	14.0	13.2	13.9	29.5	44.8	17.0	7.4	6.9	6.3	6.1	5.8	5.6	5.8	5.1	4.9	5.1	6.8	7.9	8.8	17.9	19.4	19.7	24	44.8	4.9	12.7	0	0
26	14.6	18.1	18.4	14.7	10.6	10.6	8.9	28.9	22.0	21.8	23.4	18.5	39.1	45.7	13.9	9.4	7.2	21.2	8.7	17.5	18.4	21.1	17.8	15.6	24	45.7	7.2	18.6	0	0
27	9.3	7.7	7.0	6.5	8.6	12.7	15.3	12.3	10.1	13.9	18.7	31.9	10.8	10.9	17.1	9.1	10.8	17.4	20.1	31.2	13.5	11.3	11.0	10.7	24	31.9	6.5	13.7	0	0
28	8.2	9.3	9.2	7.9	8.7	21.2	26.7	30.3	20.5	21.3	13.6	13.5	17.5	13.8	6.9	6.4	5.7	5.4	5.7	5.1	4.4	5.4	5.9	5.1	24	30.3	4.4	11.6	0	0
29	3.7	4.0	4.0	M	2.4	4.4	4.9	5.9	5.7	5.3	5.2	4.6	5.0	4.8	4.5	4.4	5.1	5.2	5.4	7.0	9.0	5.7	14.4	31.4	23	31.4	2.4	6.6	0	0
30	25.0	18.9	30.5	15.2	18.7	18.7	19.8	42.3	39.2	15.7	13.6	10.7	18.4	20.9	30.2	27.6	22.8	29.2	30.5	27.4	24.7	21.7	16.4	13.9	24	42.3	10.7	23.0	0	0
31	18.0	18.0	63.6	47.6	15.9	24.2	15.9	15.6	22.7	22.7	22.4	26.0	28.3	25.3	26.8	24.5	21.0	18.4	18.3	25.2	50.6	29.3	18.0	13.9	24	63.6	13.9	25.5	0	0
Count	31	31	31	30	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	30	31		
Maximum	67.1	44.3	63.6	47.6	66.9	46.7	48.4	86.9	103.3	52.7	41.6	33.0	39.1	45.7	31.8	31.2	26.5	29.2	43.4	38.7	52.9	63.5	87.4	78.9	24	103.3	26.5	52.9		
Minimum	0.0	0.0	0.0	0.0	0.2	0.3	2.2	1.7	1.2	0.3	0.6	0.9	1.2	0.8	1.5	0.7	0.8	0.9	1.3	0.7	1.2	2.0	0.8	0.6	21	3.3	0.0	0.8		
Average	17.6	16.2	15.6	12.6	11.6	14.8	16.5	24.1	21.2	16.4	14.3	12.8	12.2	12.5	13.0	12.2	11.6	13.6	16.2	17.4	19.8	21.5	19.6	20.5	24	42	6	16.0		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													103.3
													33.9
Data	4.0	5.6	7.4	9.5	12.8	16.5	19.5	23.9	30.9	40.5	67.0	103.3	16.0

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

Figure C-1 Time History Plots of Measured Hourly Average and 24-Hour Average NO_X Concentrations – Courtice (WPCP) Station



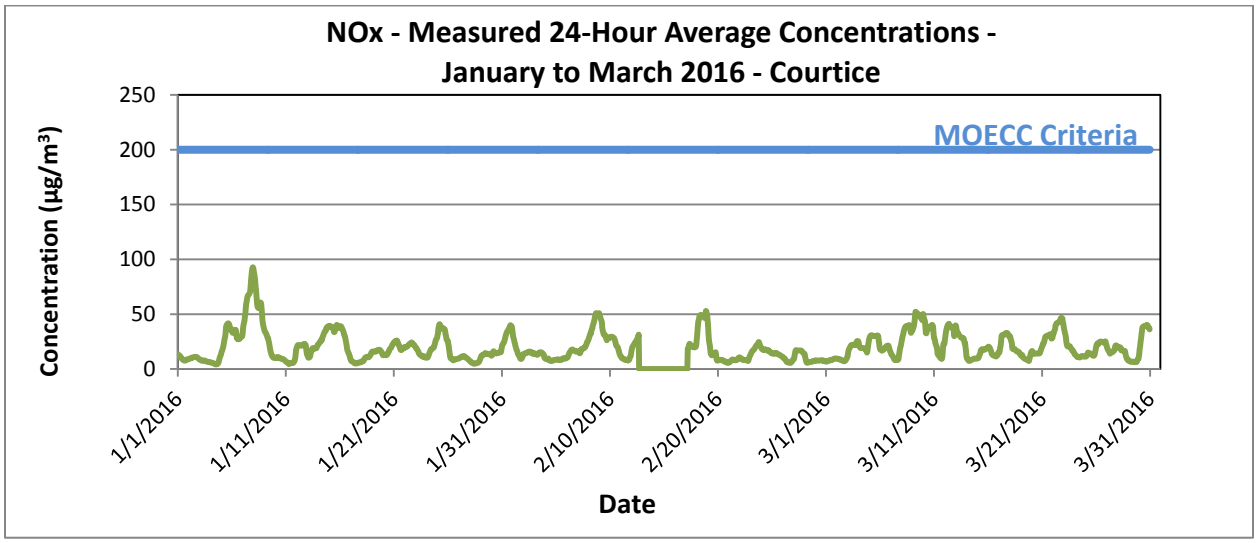
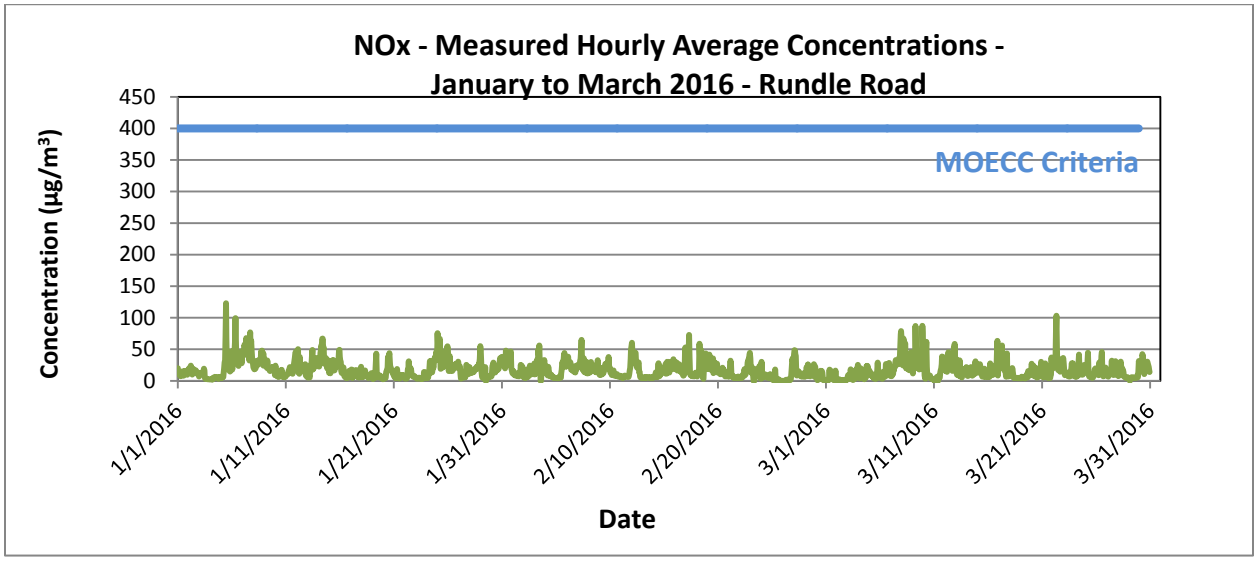
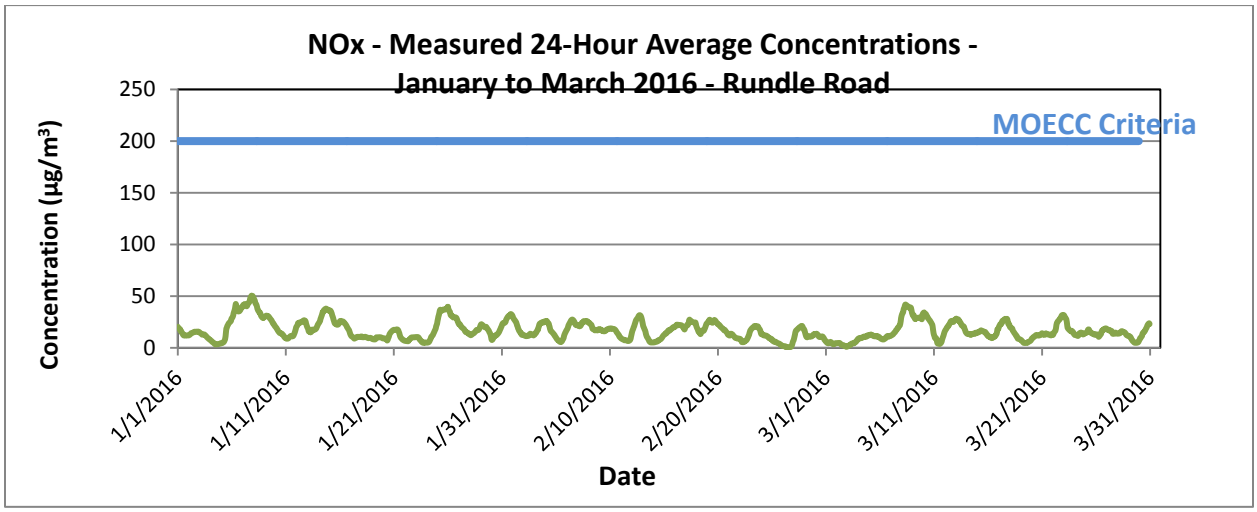


Figure C-2 Time History Plots of Measured Hourly Average and 24-Hour Average NO_X Concentrations – Rundle Road Station





Appendix D $PM_{2.5}$ DATA SUMMARIES AND TIME HISTORY PLOTS

$PM_{2.5}$ - January ($\mu g/m^3$) COURTICE 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	14.8	13.6	12.3	9.8	11.5	4.4	1.6	3.1	3.0	4.8	4.8	0.8	0.4	0.7	3.7	4.9	4.2	4.0	7.1	8.0	7.3	6.5	5.8	5.8	24	14.8	0.4	6.0
2	5.8	6.2	6.8	5.8	4.3	6.3	14.3	8.3	8.7	11.0	11.9	9.3	8.0	8.2	8.4	8.1	6.6	6.4	6.5	6.6	3.8	3.1	2.1	0.9	24	14.3	0.9	7.0
3	2.5	5.1	7.9	9.8	10.8	11.0	10.4	8.0	5.7	3.6	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	11.0	0.2	3.3
4	0.8	2.4	3.5	3.2	2.5	2.0	1.6	0.9	1.4	1.4	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.3	2.5	2.3	4.9	8.4	4.8	24	8.4	0.2	1.9
5	2.6	0.5	0.7	0.8	2.1	2.1	0.8	0.7	0.2	0.2	0.6	0.8	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.8	5.4	24	5.4	0.2	0.9
6	2.2	2.6	3.8	7.8	9.3	10.5	11.3	10.0	11.2	10.1	2.5	4.4	3.1	3.4	2.4	2.4	5.0	9.3	10.2	11.0	9.8	8.8	6.3	12.4	24	12.4	2.2	7.1
7	16.3	17.8	18.8	18.8	21.2	22.7	26.6	28.5	27.3	23.1	20.9	19.3	16.9	16.6	16.1	13.6	15.1	20.7	24.6	34.3	40.0	34.1	30.3	26.3	24	40.0	13.6	22.9
8	24.2	23.0	20.6	20.7	22.0	20.6	18.1	17.5	14.7	14.5	32.4	36.5	44.9	46.4	51.1	17.2	9.5	9.8	11.3	12.1	10.8	10.6	11.4	18.0	24	51.1	9.5	21.6
9	16.5	11.5	9.9	7.5	3.5	1.5	2.3	3.6	1.6	0.4	0.7	0.7	0.2	0.5	1.2	2.2	2.8	4.3	6.2	6.2	5.7	8.0	12.6	12.0	24	16.5	0.2	5.1
10	3.3	1.9	2.8	2.3	3.2	2.9	10.6	34.9	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	34.9	0.2	2.7
11	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.9	2.0	2.1	24	2.1	0.2	0.4
12	1.4	1.0	3.1	2.8	2.4	2.7	2.5	2.4	3.1	2.4	1.5	2.9	3.6	6.4	9.3	8.9	5.5	5.3	5.5	7.6	1.2	0.2	0.3	0.2	24	9.3	0.2	3.4
13	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	1.5	4.6	9.3	12.1	5.4	3.4	24	12.1	0.2	1.7
14	4.5	4.2	4.3	5.5	5.8	8.9	12.3	13.7	16.4	17.3	14.3	11.4	11.3	8.9	8.6	7.4	7.7	12.0	15.5	10.3	15.6	26.8	25.9	13.6	24	26.8	4.2	11.8
15	12.5	16.5	15.3	10.7	38.2	21.5	30.1	32.1	57.6	54.3	19.6	6.2	32.7	39.4	29.9	25.3	29.9	17.5	12.9	16.6	15.5	16.4	19.4	43.3	24	57.6	6.2	25.6
16	24.9	17.3	18.6	1.7	0.4	1.7	2.7	3.0	4.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	24.9	0.2	3.2
17	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.3	2.0	3.3	4.0	5.0	7.9	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	7.9	0.2	1.1
18	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.8	3.1	24	3.1	0.2	0.4
19	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	24	0.3	0.2	0.2
20	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	1.2	1.2	0.2	0.2	1.4	3.4	2.2	0.3	0.3	1.1	2.2	4.5	4.3	3.9	8.4	24	8.4	0.2	1.5
21	11.0	9.2	5.8	1.0	1.1	2.0	4.6	8.9	6.7	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	2.6	1.4	1.2	1.5	24	11.0	0.2	2.5
22	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.1	11.2	3.9	0.5	2.2	5.8	4.8	10.3	13.8	3.4	0.3	24	13.8	0.2	2.5
23	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	2.4	7.8	10.0	8.7	8.0	3.3	4.2	24	10.0	0.2	2.0
24	4.5	6.3	7.5	6.7	6.3	6.5	6.0	4.6	6.8	4.4	1.5	0.5	2.3	5.4	9.3	10.4	10.3	12.2	17.9	20.6	18.8	20.5	17.0	18.5	24	20.6	0.5	9.4
25	22.9	29.9	31.4	32.0	35.4	36.6	27.5	6.8	9.1	9.4	8.7	9.6	9.4	9.4	12.3	13.1	11.7	12.2	11.4	11.3	11.4	7.1	3.6	2.3	24	36.6	2.3	15.6
26	1.6	0.9	1.7	1.6	2.4	2.0	2.0	2.4	3.8	4.2	4.3	9.7	12.4	6.4	5.3	13.6	16.5	17.3	18.2	15.5	9.1	11.9	10.1	5.1	24	18.2	0.9	7.4
27	5.2	5.0	5.8	6.7	2.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	2.0	0.2	4.6	2.0	0.2	0.2	0.2	1.6	24	6.7	0.2	1.6
28	5.3	5.9	5.1	6.3	5.8	8.1	9.6	10.4	9.7	11.4	10.8	12.1	13.2	14.1	14.0	13.6	17.3	17.5	17.6	17.8	18.2	18.9	21.0	22.3	24	22.3	5.1	12.7
29	21.5	12.5	4.0	0.2	0.2	0.2	0.2	C	C	C	5.0	4.8	4.6	4.7	4.4	4.3	12.3	17.9	19.1	21.7	21.5	16.6	15.1	15.3	21	21.7	0.2	9.8
30	15.6	13.6	11.5	10.4	10.9	11.3	7.3	7.6	8.2	8.5	9.4	8.4	9.4	10.6	9.4	9.5	9.9	11.5	13.4	15.2	14.9	13.8	15.7	20.4	24	20.4	7.3	11.5
31	26.6	30.5	35.0	32.7	32.9	31.9	29.8	28.8	31.7	27.0	23.6	19.6	19.6	17.5	14.7	12.5	12.0	13.4	16.7	14.6	10.4	12.6	12.1	10.9	24	35.0	10.4	21.5
Count	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	741	31	30	30.9
Maximum	26.6	30.5	35.0	32.7	38.2	36.6	30.1	34.9	57.6	54.3	32.4	36.5	44.9	46.4	51.1	25.3	29.9	20.7	24.6	34.3	40.0	34.1	30.3	43.3	24	57.6	20.7	36.3
Minimum	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	21	0.3	0.2	0.2
Average	8.0	7.7	7.7	6.7	7.6	7.1	7.5	7.9	7.8	7.1	5.8	5.2	6.4	6.7	7.2	5.7	5.9	6.4	7.7	8.3	8.2	8.5	7.8	8.5	24	19	2	7

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													57.6
													25.6
Data	0.2	0.2	0.3	1.6	3.6	6.2	9.5	12.5	18.8	26.8	38.9	57.6	7.2

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

$PM_{2.5}$ - February ($\mu g/m^3$) COURTICE 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	9.6	11.3	6.3	2.1	2.3	0.5	0.6	0.3	0.6	0.8	0.8	1.0	0.9	0.9	0.9	1.3	1.6	2.3	3.1	4.4	4.6	4.8	6.8	6.2	24	11.3	0.3	3.1
2	4.0	3.4	2.9	2.6	2.2	3.2	3.5	3.8	4.4	4.2	4.1	10.9	20.7	5.4	3.6	3.5	3.1	4.8	4.7	7.7	8.3	7.1	10.7	9.8	24	20.7	2.2	5.8
3	7.3	7.8	7.7	7.5	8.6	11.4	12.5	11.2	34.6	3.2	2.2	A	A	A	2.1	4.0	7.0	7.7	5.4	5.8	9.8	4.5	5.5	7.1	21	34.6	2.1	8.2
4	9.2	10.5	9.7	12.7	7.5	1.5	1.7	2.6	1.9	0.9	1.0	1.0	0.9	0.7	0.7	0.8	0.9	1.7	2.0	1.2	1.3	2.0	2.1	1.8	24	12.7	0.7	3.2
5	1.6	1.6	1.6	2.3	2.0	1.8	1.8	7.5	4.1	2.2	2.3	2.4	4.0	6.0	9.8	9.4	11.8	14.6	13.0	10.1	9.1	12.0	13.8	13.3	24	14.6	1.6	6.6
6	14.9	16.0	16.5	15.9	17.2	17.5	18.8	20.8	21.9	18.7	14.6	17.5	17.4	17.0	15.1	11.6	5.5	5.4	6.4	9.9	10.8	11.4	13.2	14.4	24	21.9	5.4	14.5
7	18.4	26.4	31.1	32.1	33.2	34.3	38.5	38.7	32.8	27.4	20.2	15.5	15.3	15.0	14.2	15.4	16.5	18.1	17.0	16.0	23.5	45.4	25.3	22.6	24	45.4	14.2	24.7
8	17.5	31.4	37.3	32.5	31.8	33.0	21.2	24.0	46.3	56.6	70.5	29.7	25.6	29.8	21.1	13.8	15.4	13.3	5.3	5.6	7.2	17.5	8.5	18.7	24	70.5	5.3	25.6
9	25.7	6.1	10.3	3.6	3.8	4.2	4.6	4.9	5.3	6.4	13.1	24.3	53.2	47.0	26.7	8.6	6.6	12.2	22.2	34.4	14.9	12.0	9.9	9.9	24	53.2	3.6	15.4
10	9.8	10.4	12.4	13.0	10.2	6.8	5.5	4.0	4.2	4.2	3.0	2.1	1.9	2.2	2.2	2.8	2.2	2.8	2.8	2.8	2.7	2.6	2.6	2.8	24	13.0	1.9	4.8
11	3.2	4.0	4.8	4.4	4.4	4.2	4.0	3.9	4.3	4.8	4.9	4.1	2.5	2.3	2.4	2.6	2.7	3.5	4.4	5.2	6.7	5.1	4.7	5.0	24	6.7	2.3	4.1
12	7.1	7.9	6.0	5.6	6.7	5.1	5.3	6.4	6.0	6.4	7.3	6.2	5.2	5.0	5.4	6.4	7.2	6.6	4.6	3.7	2.5	3.4	3.5	3.9	24	7.9	2.5	5.6
13	4.2	4.7	5.4	5.5	5.2	5.1	5.2	5.8	6.5	5.2	4.7	4.9	4.2	3.7	3.3	3.4	3.1	3.3	3.2	3.6	3.4	3.6	3.9	3.8	24	6.5	3.1	4.4
14	3.6	2.8	2.3	2.8	2.9	2.7	3.5	3.9	3.6	2.1	1.7	1.7	1.8	4.2	2.1	1.6	1.5	2.1	3.1	5.6	5.5	4.9	3.5	5.3	24	5.6	1.5	3.1
15	7.1	7.5	4.2	2.3	3.1	5.9	3.6	2.9	3.4	2.2	1.6	1.7	2.4	3.5	5.0	5.6	6.6	9.0	11.9	13.9	14.0	13.5	12.3	10.6	24	14.0	1.6	6.4
16	9.0	8.6	8.3	10.4	17.0	18.4	20.2	18.9	14.5	11.2	7.9	5.9	6.2	8.2	15.5	14.5	11.6	10.9	7.9	7.4	8.4	10.2	13.2	13.9	24	20.2	5.9	11.6
17	10.5	8.5	10.2	16.9	29.7	27.5	25.0	22.3	24.3	20.8	2.4	1.0	1.1	1.2	1.4	1.4	1.5	1.8	2.2	3.4	4.2	4.9	5.3	7.3	24	29.7	1.0	9.8
18	6.6	7.4	7.7	7.7	7.8	7.0	6.1	7.9	7.3	3.5	3.6	3.3	1.5	0.8	0.9	1.1	0.7	0.6	1.0	1.2	5.5	7.7	4.4	2.3	24	7.9	0.6	4.3
19	2.0	1.7	2.2	2.5	2.5	1.9	2.1	2.5	2.3	2.6	2.6	2.4	2.2	1.7	1.9	1.8	4.1	7.4	8.6	8.9	8.7	8.5	6.2	7.2	24	8.9	1.7	3.9
20	10.4	8.8	2.8	8.0	11.6	10.1	8.0	4.5	1.7	1.2	1.3	1.4	1.3	1.1	0.9	1.1	0.9	1.2	1.7	2.2	2.7	3.5	1.9	1.9	24	11.6	0.9	3.8
21	1.7	2.1	2.9	3.2	3.4	3.6	3.1	2.8	6.0	3.3	3.6	5.1	3.3	1.3	1.5	2.7	3.3	2.7	3.9	5.0	4.7	7.0	7.8	6.5	24	7.8	1.3	3.8
22	6.3	6.9	6.7	6.8	6.1	7.4	6.6	4.1	4.5	4.3	7.0	7.9	7.1	5.3	5.4	5.4	4.8	5.1	6.5	6.0	5.7	8.2	6.4	8.7	24	8.7	4.1	6.2
23	6.5	6.6	10.6	10.2	15.6	6.0	2.9	3.3	3.6	5.3	C	C	4.6	4.7	5.0	5.9	7.9	8.7	7.8	6.1	5.6	6.1	7.8	6.8	22	15.6	2.9	6.7
24	13.3	15.4	17.0	17.4	13.0	11.8	11.8	11.2	11.5	10.5	6.5	6.2	4.3	2.4	1.1	0.9	1.0	0.9	0.5	0.5	0.4	0.3	0.3	0.7	24	17.4	0.3	6.6
25	1.4	2.5	1.5	0.4	0.2	0.6	1.5	1.7	1.8	1.2	1.4	1.7	1.6	1.8	2.5	3.7	2.8	2.8	2.9	2.2	1.9	2.0	1.9	2.1	24	3.7	0.2	1.8
26	1.7	1.8	2.1	2.3	2.2	2.4	2.9	2.9	3.1	2.6	2.5	2.5	2.8	2.6	2.8	2.7	3.8	5.5	6.3	6.6	5.2	6.9	5.7	4.5	24	6.9	1.7	3.5
27	3.3	5.1	7.3	6.2	7.2	6.5	5.7	3.9	5.1	7.5	8.3	10.2	12.0	13.0	12.1	11.3	12.3	13.2	14.8	15.4	15.5	15.9	16.8	16.5	24	16.8	3.3	10.2
28	16.1	16.8	14.7	14.3	14.3	14.9	16.0	17.2	14.1	12.8	10.3	8.9	7.5	7.3	7.8	8.8	8.5	8.0	8.3	6.9	6.8	8.6	6.9	7.2	24	17.2	6.8	11.0
29	9.5	7.7	7.5	8.3	8.8	6.1	6.0	5.7	5.9	4.7	4.1	3.5	5.1	8.5	10.4	6.6	6.2	2.9	1.6	2.1	2.6	3.0	2.7	3.0	24	10.4	1.6	5.5
30																									0			
31																									0			
Count	29	29	29	29	29	29	29	29	29	29	28	27	28	28	29	29	29	29	29	29	29	29	29	29	691	29	27	28.8
Maximum	25.7	31.4	37.3	32.5	33.2	34.3	38.5	38.7	46.3	56.6	70.5	29.7	53.2	47.0	26.7	15.4	16.5	18.1	22.2	34.4	23.5	45.4	25.3	22.6	24	70.5	15.4	34.4
Minimum	1.4	1.6	1.5	0.4	0.2	0.5	0.6	0.3	0.6	0.8	0.8	1.0	0.9	0.7	0.7	0.8	0.7	0.6	0.5	0.5	0.4	0.3	0.3	0.7	0	3.7	0.2	
Average	8.3	8.7	9.0	8.9	9.7	9.0	8.6	8.6	9.8	8.2	7.6	6.8	7.7	7.2	6.3	5.5	5.5	6.2	6.3	7.0	7.0	8.4	7.4	7.7	22	18	3	7.7

																		Maximum
Percentiles		10		20		30		40		50		60		70		80		90		95		99		100				70.5
																										25.6
Data		1.6		2.3		3.1		4.2		5.3		6.6		8.2		11.4		16.5		23.1		38.5		70.5				7.7

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

											$PM_{2.5}$ - March ($\mu g/m^3$)		COURTICE 2016																
	Hour																												
Day	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average		
1	3.6	4.9	5.8	5.8	5.4	5.2	4.8	4.2	4.6	4.8	4.2	4.3	4.0	4.3	3.5	3.2	2.2	1.8	1.9	1.7	1.7	1.5	1.3	1.5	24	5.8	1.3	3.6		
2	1.9	1.9	1.9	1.8	1.5	1.4	1.4	1.5	1.7	1.8	1.4	1.7	1.6	1.3	1.4	1.6	1.7	1.9	2.7	3.6	4.2	4.2	4.1	4.8	24	4.8	1.3	2.2		
3	3.9	4.9	5.1	4.1	3.4	2.7	3.2	3.5	3.8	2.0	1.3	1.1	1.2	1.5	1.7	1.6	2.9	5.2	7.7	9.2	10.8	10.4	8.7	8.2	24	10.8	1.1	4.5		
4	6.9	6.4	5.9	5.7	6.4	5.6	6.3	6.7	6.0	3.1	2.3	2.4	2.3	2.3	2.4	3.1	2.7	2.9	3.8	4.9	8.8	14.1	18.1	18.1	24	18.1	2.3	6.1		
5	21.3	23.9	20.5	13.2	13.7	14.1	13.9	14.4	14.1	7.5	3.8	3.9	4.3	4.2	4.2	3.9	4.4	5.1	6.2	6.6	11.4	18.7	18.7	19.6	24	23.9	3.8	11.3		
6	19.3	20.0	17.6	15.7	15.1	18.7	15.5	16.5	14.9	11.3	10.0	9.6	7.1	12.5	11.3	11.3	12.8	12.3	12.8	13.9	11.6	10.5	13.5	16.9	24	20.0	7.1	13.8		
7	18.0	18.6	18.6	20.8	23.7	19.2	15.6	14.9	16.5	16.4	17.5	17.7	17.1	16.1	15.3	14.9	14.8	16.3	22.8	22.9	24.2	25.9	28.1	26.3	24	28.1	14.8	19.2		
8	25.4	27.8	30.5	32.6	32.5	32.3	31.8	32.1	29.6	27.4	25.2	25.6	24.8	23.6	23.2	22.1	23.3	24.7	23.9	22.3	20.9	22.4	25.7	23.8	24	32.6	20.9	26.4		
9	22.0	23.6	22.8	27.2	27.5	32.5	32.1	24.3	12.4	7.6	7.1	7.5	8.3	10.0	13.4	15.9	18.5	21.0	20.2	18.8	18.9	20.0	21.7	23.8	24	32.5	7.1	19.1		
10	24.5	26.2	26.2	21.9	15.7	14.0	22.8	27.8	16.5	10.0	7.8	3.4	1.3	2.0	2.3	4.5	6.9	7.1	5.1	5.1	5.4	6.8	7.8	8.6	24	27.8	1.3	11.7		
11	8.3	13.0	11.3	6.6	5.7	7.9	8.2	7.3	6.1	4.8	C	C	C	1.9	2.9	5.4	6.6	9.3	10.4	15.8	21.0	19.9	14.0	15.2	21	21.0	1.9	9.6		
12	12.5	13.0	14.4	16.8	15.1	14.0	14.7	12.4	2.9	10.9	14.1	12.6	12.0	7.9	6.3	5.3	4.2	1.8	2.9	6.0	8.0	5.8	10.7	16.6	24	16.8	1.8	10.0		
13	18.6	13.5	16.9	20.2	19.5	14.3	9.4	4.7	2.6	2.0	1.4	1.4	1.6	1.3	1.0	0.9	0.9	1.4	1.3	1.3	1.4	1.6	1.5	1.9	24	20.2	0.9	5.9		
14	2.5	4.1	5.0	5.4	5.7	6.3	5.7	5.2	3.9	2.8	2.1	2.1	2.0	2.2	2.6	2.9	2.4	2.9	3.3	4.4	4.7	5.9	5.3	6.1	24	6.3	2.0	4.0		
15	8.4	12.1	11.3	12.6	9.9	10.7	10.7	10.1	9.4	8.2	5.3	1.7	1.5	1.1	1.5	1.4	1.5	1.9	2.2	2.2	4.0	7.6	10.7	11.2	24	12.6	1.1	6.6		
16	11.0	7.0	5.9	6.7	6.3	4.3	4.9	3.9	3.7	4.0	4.1	4.8	7.0	10.5	12.6	11.1	9.3	7.0	5.1	4.9	1.7	2.2	2.0	3.3	24	12.6	1.7	6.0		
17	4.5	7.7	16.5	13.2	6.5	7.0	7.3	3.0	1.6	1.7	1.8	2.4	3.6	5.2	4.5	3.2	2.6	1.9	2.9	4.5	3.4	3.8	2.3	3.9	24	16.5	1.6	4.8		
18	3.4	2.6	2.3	2.8	3.5	3.5	3.1	1.8	1.6	2.1	2.5	2.0	2.2	1.5	1.6	1.4	1.2	1.4	1.6	2.2	2.7	2.2	2.3	2.1	24	3.5	1.2	2.2		
19	2.1	2.0	2.5	4.1	4.7	3.1	3.9	2.1	1.8	1.6	1.5	1.4	1.4	1.4	1.3	1.3	1.7	1.9	2.6	3.8	6.2	10.5	18.1	22.4	24	22.4	1.3	4.3		
20	25.1	21.5	10.0	6.3	4.6	3.6	3.6	2.7	3.2	3.7	3.6	3.4	2.8	2.5	2.3	2.2	2.0	2.0	2.4	3.7	6.7	10.1	12.5	9.9	24	25.1	2.0	6.3		
21	8.4	8.2	6.7	3.5	3.8	4.0	4.4	4.3	2.8	1.8	1.9	3.0	3.5	3.3	3.0	2.2	2.6	2.7	3.4	5.7	6.8	6.7	8.6	10.6	24	10.6	1.8	4.7		
22	11.3	9.8	8.4	7.8	7.1	8.4	9.1	7.0	8.3	10.4	9.4	9.9	9.0	9.7	8.3	10.2	9.0	9.7	10.9	12.7	13.2	16.7	20.2	22.3	24	22.3	7.0	10.8		
23	19.0	18.3	16.1	16.7	19.2	17.2	4.2	4.5	2.0	1.5	2.2	2.4	3.2	3.0	3.4	2.9	3.1	4.4	4.2	4.6	4.3	3.7	5.9	4.9	24	19.2	1.5	7.1		
24	4.8	5.0	5.0	4.1	4.3	2.8	2.1	1.9	1.6	1.5	1.8	2.0	1.9	3.2	3.3	3.5	2.4	3.3	3.9	4.6	4.5	4.6	5.5	5.5	24	5.5	1.5	3.5		
25	5.2	7.2	11.2	14.9	19.9	23.3	14.5	3.2	1.6	1.9	2.0	2.4	2.3	2.7	3.1	3.5	4.0	4.7	6.8	8.4	9.6	11.7	14.1	17.3	24	23.3	1.6	8.1		
26	19.7	21.4	21.1	15.6	12.1	11.8	10.1	10.9	5.8	5.1	5.7	4.1	4.6	4.8	4.5	3.8	4.3	5.9	12.2	12.4	17.6	17.6	15.5	15.8	24	21.4	3.8	10.9		
27	18.1	16.1	13.2	10.8	9.0	9.1	7.8	9.1	26.7	6.8	5.6	8.1	11.1	13.3	12.4	9.9	12.1	14.8	16.9	16.0	16.4	18.1	14.6	13.9	24	26.7	5.6	12.9		
28	15.1	18.6	15.4	16.5	14.3	12.9	9.4	9.2	8.4	18.7	2.9	1.1	2.3	1.0	0.3	0.2	0.9	2.6	4.2	4.1	3.2	4.2	2.5	2.2	24	18.7	0.2	7.1		
29	2.3	2.5	2.9	3.4	3.7	3.8	3.4	2.8	3.5	3.9	3.7	3.9	3.8	3.1	2.7	2.5	3.4	4.0	5.4	6.8	7.5	5.1	4.0	6.8	24	7.5	2.3	4.0		
30	7.6	7.6	7.3	7.3	9.6	12.7	20.6	15.9	14.2	12.3	9.6	7.2	7.4	7.5	6.7	6.1	4.9	6.4	6.9	5.6	4.9	5.1	6.2	6.1	24	20.6	4.9	8.6		
31	6.5	7.4	7.4	7.6	11.5	11.9	8.8	8.6	9.7	10.3	9.5	11.6	12.6	13.6	12.6	10.8	9.4	6.5	4.9	5.3	5.3	4.6	2.9	0.7	24	13.6	0.7	8.3		
Count	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	741	31	30	30.9		
Maximum	25.4	27.8	30.5	32.6	32.5	32.5	32.1	32.1	29.6	27.4	25.2	25.6	24.8	23.6	23.2	22.1	23.3	24.7	23.9	22.9	24.2	25.9	28.1	26.3	24	32.6	22.1	26.9		
Minimum	1.9	1.9	1.9	1.8	1.5	1.4	1.4	1.5	1.6	1.5	1.3	1.1	1.2	1.0	0.3	0.2	0.9	1.4	1.3	1.3	1.4	1.5	1.3	0.7	21	3.5	0.2	1.3		
Average	11.6	12.2	11.8	11.3	11.0	10.9	10.1	8.9	7.8	6.7	5.7	5.5	5.6	5.8	5.7	5.6	5.8	6.3	7.1	7.9	8.7	9.8	10.6	11.3	24	18	3	8.5		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													32.6
													26.4
Data	1.8	2.5	3.5	4.5	5.8	7.8	10.7	14.3	19.2	23.3	30.1	32.6	8.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down

$PM_{2.5}$ - January ($\mu g/m^3$) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	15.6	14.6	12.9	11.6	13.2	8.6	5.7	6.7	7.1	9.1	9.3	5.6	6.2	7.2	9.3	10.1	9.4	8.7	11.7	11.7	11.4	10.8	10.0	9.7	24	15.6	5.6	9.9
2	9.5	9.1	9.7	9.5	8.2	9.0	14.0	12.8	14.3	17.9	18.1	15.5	13.7	13.8	13.8	13.2	12.3	11.6	11.5	11.8	9.1	8.3	7.2	5.9	24	18.1	5.9	11.7
3	7.6	10.3	12.9	14.6	14.9	15.0	14.4	12.4	9.9	7.6	6.1	3.1	2.5	2.5	2.4	2.3	2.8	3.2	3.2	4.0	6.4	6.1	6.5	6.3	24	15.0	2.3	7.4
4	7.0	7.9	8.2	7.2	6.5	5.9	5.5	5.3	4.3	2.8	2.7	2.4	2.4	2.1	2.0	2.4	5.3	5.8	5.6	28.3	7.1	6.0	6.9	6.5	24	28.3	2.0	6.1
5	5.6	7.1	5.9	6.3	6.7	7.0	7.3	6.4	8.1	7.4	9.7	12.6	10.2	6.5	7.1	6.2	7.9	9.0	8.2	7.6	6.9	8.2	8.9	13.7	24	13.7	5.6	7.9
6	11.1	10.7	12.1	14.6	14.8	15.1	15.8	15.1	17.4	17.1	10.4	11.2	10.5	9.6	8.9	8.2	8.3	9.6	11.2	12.6	13.8	14.0	10.7	14.1	24	17.4	8.2	12.4
7	17.8	21.6	21.0	21.4	24.5	24.2	25.3	29.1	30.7	26.1	24.0	24.5	19.5	24.9	23.4	18.3	19.3	20.4	24.2	33.8	35.7	36.4	31.8	28.5	24	36.4	17.8	25.3
8	26.0	23.4	22.8	23.1	22.7	21.2	20.5	19.8	18.4	15.7	17.4	18.7	16.2	15.8	15.6	16.2	15.0	16.9	18.0	19.9	17.7	18.0	18.7	24.2	24	26.0	15.0	19.2
9	25.4	15.1	15.5	14.1	13.0	8.0	11.1	11.7	6.6	4.5	4.0	13.1	4.0	5.2	5.8	5.6	7.3	10.5	10.9	11.7	12.6	12.6	17.9	18.1	24	25.4	4.0	11.0
10	7.3	4.3	7.8	5.2	5.8	6.2	4.4	2.1	1.3	1.6	1.2	1.1	11.3	4.2	1.0	1.6	1.2	2.0	2.1	2.4	2.5	2.6	2.3	2.7	24	11.3	1.0	3.5
11	3.2	4.2	2.7	2.8	3.2	2.6	2.5	2.5	3.2	3.7	3.5	2.9	2.7	3.3	3.4	3.3	6.0	9.3	10.7	12.9	13.5	16.6	20.1	10.5	24	20.1	2.5	6.2
12	9.3	6.3	7.5	10.1	7.6	7.5	8.2	8.7	8.4	7.4	6.3	7.4	8.6	10.7	12.3	11.9	10.7	10.3	10.2	11.5	6.7	4.8	5.4	5.1	24	12.3	4.8	8.4
13	4.6	3.9	3.7	3.4	3.7	4.0	5.8	4.0	4.9	6.0	5.8	6.4	4.7	4.8	5.1	7.2	6.6	4.9	8.0	10.6	14.4	16.0	11.0	8.1	24	16.0	3.4	6.6
14	9.3	9.3	10.1	10.0	9.9	11.8	14.1	16.1	17.6	19.5	18.8	15.9	16.7	14.9	14.0	13.2	12.6	13.3	14.2	12.7	15.0	24.6	20.5	14.0	24	24.6	9.3	14.5
15	12.5	13.4	12.7	12.7	12.0	12.6	12.3	14.3	15.2	13.6	11.2	10.3	12.3	13.0	13.4	14.1	16.2	17.0	17.6	15.9	M	M	M	M	20	17.6	10.3	13.6
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	0	0.0	0.0	
29	M	M	M	M	M	M	M	M	M	M	M	M	C	C	M	M	M	0.5	0.0	0.0	0.2	10.5	18.8	23.6	7	23.6	0.0	
30	25.2	31.2	26.8	27.3	32.7	34.3	25.8	29.3	31.5	30.7	37.8	30.7	30.9	26.7	18.4	18.3	16.7	11.1	0.3	0.5	0.8	0.7	3.4	1.4	24	37.8	0.3	20.5
31	0.5	6.3	7.4	7.6	7.4	7.7	7.5	7.2	7.5	8.0	8.9	7.7	8.1	16.4	16.7	18.3	14.2	5.5	1.7	1.6	1.6	1.4	1.9	5.3	24	18.3	0.5	7.4
Count	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	18	18	18	17	17	17	17	411	18	17	17.1
Maximum	26.0	31.2	26.8	27.3	32.7	34.3	25.8	29.3	31.5	30.7	37.8	30.7	30.9	26.7	23.4	18.3	19.3	20.4	24.2	33.8	35.7	36.4	31.8	28.5	24	37.8	18.3	28.9
Minimum	0.5	3.9	2.7	2.8	3.2	2.6	2.5	2.1	1.3	1.6	1.2	1.1	2.4	2.1	1.0	1.6	1.2	0.5	0.0	0.0	0.2	0.7	1.9	1.4	0	0.0	0.0	
Average	11.6	11.7	11.7	11.8	12.2	11.8	11.8	12.0	12.1	11.7	11.5	11.1	10.6	10.7	10.2	10.0	10.1	9.4	9.4	11.6	10.3	11.6	11.9	11.6	13	12	3	11

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	2.7	5.1	6.5	7.9	9.7	11.7	13.8	16.2	21.4	26.1	33.7	37.8

	Maximum
	37.8
	25.3
	11.3

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

$PM_{2.5}$ - February ($\mu g/m^3$)	Rundle Road 2016																												
Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average		
1	7.7	7.0	5.9	4.2	2.5	1.8	0.5	0.4	0.3	0.4	0.4	0.5	0.7	0.7	0.5	0.6	0.8	0.7	0.4	0.5	0.6	0.7	0.7	0.8	24	7.7	0.3	1.6		
2	0.6	0.5	0.4	0.7	1.2	1.5	2.5	2.2	2.6	3.9	6.1	10.1	20.4	32.5	20.7	15.5	16.5	9.0	4.3	1.6	1.5	1.8	2.2	2.3	24	32.5	0.4	6.7		
3	4.7	7.6	7.6	9.2	13.2	22.3	35.7	71.8	48.8	10.9	9.3	9.9	10.8	15.3	A	A	18.3	18.5	12.1	5.6	7.9	9.1	2.5	1.4	22	71.8	1.4	16.0		
4	1.5	2.0	2.3	2.4	3.0	2.0	0.5	0.5	0.6	0.6	0.4	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.9	0.4	24	3.0	0.2	0.9		
5	0.4	0.4	0.3	0.3	0.5	0.5	0.4	0.3	1.0	0.6	0.4	0.3	0.3	0.7	1.0	1.4	1.8	1.8	2.5	3.3	2.3	2.1	2.6	3.1	24	3.3	0.3	1.2		
6	5.1	8.8	12.3	10.1	12.6	13.6	13.0	14.6	11.0	16.7	13.9	12.9	16.5	17.3	17.4	15.9	12.3	5.4	5.6	27.3	73.4	71.6	60.7	60.9	24	73.4	5.1	22.0		
7	54.4	60.0	63.1	63.4	51.9	44.7	41.3	32.1	20.7	26.6	47.3	41.7	37.1	36.7	35.4	28.0	22.5	18.4	15.1	12.6	10.0	11.4	12.5	11.4	24	63.4	10.0	33.3		
8	8.9	5.6	4.5	2.3	1.2	1.8	1.9	2.2	3.6	5.1	5.4	6.0	5.9	7.5	7.1	7.1	7.7	8.7	8.0	9.2	5.6	3.6	2.1	1.3	24	9.2	1.2	5.1		
9	1.3	1.2	1.2	1.1	1.1	1.3	1.6	2.2	2.7	7.4	12.1	14.2	19.1	20.6	23.6	37.1	30.2	40.1	26.8	24.1	14.9	16.4	12.2	9.6	24	40.1	1.1	13.4		
10	12.1	9.6	7.6	5.7	7.9	7.9	6.3	4.6	2.3	2.9	2.8	3.6	2.7	3.1	M	6.0	3.8	2.3	2.0	1.9	1.8	1.1	1.8	1.9	23	12.1	1.1	4.4		
11	1.1	1.8	1.9	1.7	1.8	1.7	1.8	1.9	2.1	2.3	2.3	7.6	18.6	36.6	38.0	44.6	42.2	35.8	27.5	19.3	13.8	3.3	2.5	3.9	24	44.6	1.1	13.1		
12	15.5	25.5	27.6	31.6	37.0	32.5	33.2	38.6	39.0	43.6	49.8	45.4	44.8	42.1	40.5	38.7	33.1	18.1	11.9	5.1	1.3	0.2	0.2	0.3	24	49.8	0.2	27.3		
13	0.3	0.4	0.7	0.9	1.1	1.6	2.0	2.5	3.1	3.4	3.5	7.0	23.4	31.6	44.0	45.4	61.7	41.1	26.9	11.7	2.6	1.2	1.5	1.5	24	61.7	0.3	13.3		
14	1.6	1.8	1.6	1.6	2.0	1.9	2.3	2.0	4.9	29.3	47.4	60.3	104.6	64.4	47.4	46.2	45.1	53.9	41.9	34.6	31.0	27.5	21.6	18.3	24	104.6	1.6	28.9		
15	13.0	13.9	14.7	12.1	10.2	10.3	14.8	33.6	30.6	31.9	35.7	41.1	45.1	46.0	40.9	38.4	37.0	38.0	40.3	40.6	32.4	28.5	24.8	20.7	24	46.0	10.2	28.9		
16	20.2	18.9	22.3	25.9	22.6	22.9	18.1	13.8	10.5	9.1	7.4	6.8	6.9	8.6	13.7	14.7	10.8	10.1	6.1	4.3	4.6	5.4	6.5	7.8	24	25.9	4.3	12.4		
17	5.6	4.0	5.0	8.7	17.9	21.3	15.1	14.0	14.4	13.5	2.7	1.7	1.6	1.4	1.9	2.0	2.3	1.3	0.0	0.0	0.0	0.3	0.4	0.4	24	21.3	0.0	5.6		
18	0.3	0.3	0.3	0.5	0.4	0.8	0.7	1.2	0.9	3.5	28.9	91.7	85.5	18.3	16.5	15.1	2.4	3.4	5.7	9.0	14.6	12.7	11.3	10.4	24	91.7	0.3	13.9		
19	6.6	9.6	14.5	17.0	17.5	16.2	15.0	16.4	31.5	12.9	7.9	5.5	7.5	15.3	5.5	5.4	9.2	21.8	19.7	18.5	15.6	14.0	13.8	12.8	24	31.5	5.4	13.7		
20	13.1	9.6	5.9	7.2	8.4	7.0	5.0	3.4	1.0	0.2	0.3	0.6	2.0	2.2	3.0	3.0	3.0	4.6	3.7	2.3	2.2	0.8	0.6	0.6	24	13.1	0.2	3.7		
21	0.5	0.6	0.7	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.7	1.1	2.4	2.5	2.4	3.0	2.0	0.9	0.7	0.5	0.8	1.1	1.1	2.1	24	3.0	0.5	1.2		
22	1.8	1.5	1.5	1.8	1.5	2.0	1.8	1.4	1.0	0.7	1.4	12.4	7.8	6.8	7.4	9.6	11.5	11.8	8.1	2.0	2.4	2.2	2.0	2.2	24	12.4	0.7	4.3		
23	1.8	1.6	1.4	1.2	2.0	2.9	2.0	C	C	C	13.2	14.9	18.8	19.6	19.9	20.3	19.1	19.7	14.0	8.2	5.4	8.3	5.4	6.0	21	20.3	1.2	9.8		
24	9.2	16.5	17.1	14.3	11.4	9.7	9.8	10.0	9.1	8.2	5.2	5.9	5.0	3.1	2.4	2.7	2.8	2.7	2.5	2.8	2.4	2.2	2.1	2.6	24	17.1	2.1	6.6		
25	3.6	4.0	2.6	1.9	1.8	1.4	2.1	2.1	2.6	3.0	2.5	2.4	2.1	1.8	1.8	1.8	1.6	1.5	0.7	0.2	0.0	0.0	0.0	0.0	24	4.0	0.0	1.7		
26	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.6	0.8	1.5	3.4	5.4	8.3	10.2	9.8	11.8	11.7	11.6	9.2	2.9	3.5	3.9	2.3	24	11.8	0.0	4.0		
27	4.5	8.4	10.0	11.4	14.2	16.4	15.6	12.9	19.1	32.0	36.6	40.9	43.6	46.2	36.6	29.2	27.0	26.0	25.1	23.5	22.2	20.7	20.4	18.7	24	46.2	4.5	23.4		
28	16.7	14.8	13.6	10.9	11.2	11.8	12.2	13.2	12.4	13.7	12.3	13.0	11.7	11.6	12.2	13.1	13.5	12.0	14.0	8.2	6.1	4.6	2.6	1.3	24	16.7	1.3	11.1		
29	0.8	1.0	3.0	6.5	7.3	3.3	1.4	0.0	0.2	0.0	0.0	0.2	2.5	6.2	8.5	8.0	8.4	3.7	0.6	0.6	0.6	0.6	0.4	1.0	24	8.5	0.0	2.7		
30																									0					
31																									0					
Count	29	29	29	29	29	29	29	28	28	28	29	29	29	29	27	28	29	29	29	29	29	29	29	29	690	29	27	28.8		
Maximum	54.4	60.0	63.1	63.4	51.9	44.7	41.3	71.8	48.8	43.6	49.8	91.7	104.6	64.4	47.4	46.2	61.7	53.9	41.9	40.6	73.4	71.6	60.7	60.9	24	104.6	40.6	58.8		
Minimum	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.2	0.3	0.4	0.4	0.5	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0	3.0	0.0			
Average	7.3	8.2	8.6	8.8	9.1	9.0	8.9	10.7	9.9	10.1	12.3	15.9	19.1	17.5	17.0	16.5	15.8	14.6	11.7	9.9	9.6	8.8	7.6	7.1	22	33	2	11.4		

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100	Maximum
													104.6
													33.3
Data	0.5	1.2	2.0	2.7	5.5	9.0	12.9	18.3	33.1	43.0	63.5	104.6	11.4

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

$PM_{2.5}$ - March ($\mu g/m^3$) Rundle Road 2016

Day	Hour 0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Count	Maximum	Minimum	Average
1	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	1.3	3.0	3.8	5.0	6.1	7.3	8.0	7.6	5.9	6.3	5.9	5.5	7.0	24	8.0	0.0	3.1
2	7.2	7.5	4.6	2.2	1.3	1.1	1.3	1.5	1.0	3.4	10.7	8.2	11.0	7.3	6.4	4.3	4.3	17.6	33.0	12.7	0.8	0.7	0.2	0.8	24	33.0	0.2	6.2
3	1.4	1.1	1.4	1.0	0.9	0.8	1.1	1.4	4.2	3.7	5.5	6.5	7.7	8.1	8.9	9.6	9.3	11.1	10.3	7.2	2.8	2.2	2.0	2.4	24	11.1	0.8	4.6
4	4.4	7.1	8.6	8.5	8.4	8.0	8.2	8.1	6.9	8.7	7.2	8.0	9.4	7.2	7.1	8.1	6.6	7.1	10.8	6.5	2.8	3.8	9.6	11.8	24	11.8	2.8	7.6
5	12.2	9.6	11.0	12.7	12.5	9.7	8.9	11.3	8.7	5.5	3.3	4.4	4.6	4.5	4.4	3.9	4.2	5.0	7.2	6.3	5.8	9.5	7.7	7.5	24	12.7	3.3	7.5
6	7.4	5.3	5.5	3.5	2.1	1.4	2.2	4.2	11.4	17.6	11.9	21.2	16.9	27.5	25.2	21.1	20.9	16.3	15.1	13.9	9.7	7.2	10.3	13.3	24	27.5	1.4	12.1
7	14.4	14.6	16.3	18.5	21.1	19.8	16.8	16.3	15.5	14.9	16.3	17.0	16.8	16.8	17.0	18.0	21.4	25.4	27.1	29.0	26.4	27.0	23.6	23.2	24	29.0	14.4	19.7
8	22.9	25.1	26.4	27.9	28.2	27.9	27.6	28.0	24.8	19.9	19.5	21.1	22.7	22.1	22.7	22.3	22.4	21.2	18.7	19.4	20.7	20.8	20.2	19.0	24	28.2	18.7	23.0
9	15.5	12.7	13.1	12.6	14.2	13.9	16.0	21.5	12.3	7.0	8.3	9.7	12.0	13.7	17.7	19.3	20.8	22.5	22.1	23.6	24.2	27.3	27.1	26.0	24	27.3	7.0	17.2
10	31.7	33.4	30.5	24.3	22.1	18.4	18.9	14.7	10.8	10.3	9.1	7.1	5.8	4.5	4.5	5.7	6.2	5.2	2.8	1.7	0.8	0.2	0.2	0.2	24	33.4	0.2	11.2
11	0.5	2.0	1.7	0.8	0.4	1.1	1.8	C	C	C	1.8	1.6	2.2	3.5	5.5	9.3	12.5	16.3	15.3	11.8	8.0	4.4	2.8	4.0	21	16.3	0.4	5.1
12	3.4	3.2	3.8	3.9	3.5	3.5	4.7	3.0	3.6	16.0	27.5	22.3	21.8	16.1	11.9	10.6	8.7	4.6	6.1	10.1	16.3	9.1	14.9	14.7	24	27.5	3.0	10.1
13	10.5	11.1	15.3	15.8	11.8	8.1	5.1	2.1	2.1	2.4	1.9	2.1	1.8	1.3	0.6	1.7	1.0	1.1	1.5	1.1	0.4	0.3	0.4	0.8	24	15.8	0.3	4.2
14	3.6	7.3	7.8	7.5	8.1	7.9	8.1	6.6	4.9	4.0	3.5	4.5	3.6	4.0	3.7	5.1	5.1	6.0	4.8	4.8	5.2	4.4	4.8	4.9	24	8.1	3.5	5.4
15	4.4	6.5	6.8	6.7	7.5	7.0	7.6	6.4	3.4	3.1	3.7	2.1	2.0	1.9	2.1	3.0	3.1	2.3	2.3	1.1	1.1	1.9	2.3	2.9	24	7.6	1.1	3.8
16	2.5	1.5	1.3	1.6	1.3	1.1	1.1	0.9	2.3	3.6	3.3	3.9	5.1	6.4	8.2	10.0	14.8	18.7	12.5	9.7	4.6	5.6	3.4	2.2	24	18.7	0.9	5.2
17	3.3	8.9	10.8	13.0	7.4	3.8	2.7	3.6	4.7	7.5	7.7	8.3	10.3	12.5	9.8	8.3	7.5	7.5	7.8	6.4	4.5	2.8	1.0	0.5	24	13.0	0.5	6.7
18	1.8	2.8	2.4	1.5	0.9	0.6	0.9	1.1	2.6	3.7	4.4	3.9	3.5	2.4	1.8	1.8	0.7	0.9	1.0	1.2	0.4	0.2	0.5	0.2	24	4.4	0.2	1.7
19	0.0	0.0	0.0	0.2	0.2	0.5	0.3	0.2	0.4	0.2	0.2	0.0	0.0	0.2	0.2	0.0	0.2	0.3	0.0	0.4	0.9	1.6	4.4	10.5	24	10.5	0.0	0.9
20	20.6	12.7	6.0	2.9	1.9	1.7	1.6	1.1	1.3	3.0	5.7	6.9	4.9	7.0	5.2	5.0	6.9	9.7	4.7	3.5	1.5	2.7	4.3	3.3	24	20.6	1.1	5.2
21	3.2	2.7	1.1	0.9	2.8	2.1	1.4	2.2	6.0	7.7	11.6	18.1	16.9	16.2	13.2	7.6	5.4	4.4	5.1	7.3	11.2	11.3	8.4	6.8	24	18.1	0.9	7.2
22	11.6	6.7	4.1	4.3	4.2	2.5	2.1	3.6	18.9	36.2	38.3	35.9	30.3	26.6	25.6	26.9	25.1	23.6	18.5	21.4	17.7	18.3	18.4	20.0	24	38.3	2.1	18.4
23	17.9	15.7	15.1	15.7	18.5	15.2	4.4	4.3	2.1	1.4	2.3	2.5	2.8	3.3	4.6	3.6	3.8	4.1	4.5	4.0	1.4	0.5	0.3	0.5	24	18.5	0.3	6.2
24	0.8	0.7	0.8	0.3	0.3	0.0	0.0	0.0	1.1	2.9	3.8	5.3	7.4	10.3	9.7	7.9	8.3	10.1	8.6	7.7	6.7	8.9	8.4	9.6	24	10.3	0.0	5.0
25	7.9	8.0	13.4	15.2	21.4	25.4	19.3	4.7	0.5	0.3	0.2	0.0	0.3	0.6	1.5	1.5	1.6	1.9	3.7	3.2	3.0	2.0	1.5	2.6	24	25.4	0.0	5.8
26	3.2	3.7	5.0	3.7	2.7	2.1	2.3	8.1	8.0	13.9	20.7	14.9	28.5	25.0	9.4	7.0	6.0	10.0	8.6	9.5	5.4	5.0	2.9	1.5	24	28.5	1.5	8.6
27	3.1	5.7	6.6	4.5	4.5	4.1	3.4	5.2	6.2	8.0	15.3	22.3	23.2	20.8	16.1	14.4	21.1	18.1	17.2	16.8	13.9	10.9	11.5	11.5	24	23.2	3.1	11.8
28	17.7	20.1	19.3	19.9	16.7	15.7	12.2	10.8	14.4	32.6	6.6	2.8	4.4	2.5	1.2	0.9	1.5	3.3	5.0	3.7	2.6	3.5	1.6	0.7	24	32.6	0.7	9.2
29	1.3	2.1	1.8	M	2.3	2.3	2.0	2.1	2.2	2.1	2.0	2.0	2.0	1.7	1.5	1.4	1.9	2.0	23.0	39.0	29.9	16.6	10.5	13.0	23	39.0	1.3	7.2
30	11.1	5.5	1.8	1.8	4.2	4.1	3.5	13.0	29.4	33.3	25.8	20.7	23.5	26.9	19.6	14.6	11.5	10.9	7.8	5.4	4.6	5.2	6.7	5.7	24	33.3	1.8	12.3
31	6.4	7.1	10.5	10.9	12.6	15.1	10.8	9.9	9.2	9.5	9.3	10.8	15.3	15.8	14.5	13.7	15.9	14.5	14.3	12.7	12.4	13.9	10.1	6.6	24	15.9	6.4	11.7
Count	31	31	31	30	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	740	31	30	30.8
Maximum	31.7	33.4	30.5	27.9	28.2	27.9	27.6	28.0	29.4	36.2	38.3	35.9	30.3	27.5	25.6	26.9	25.1	25.4	33.0	39.0	29.9	27.3	27.1	26.0	24	39.0	25.1	29.9
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.2	0.2	0.0	0.2	0.3	0.0	0.4	0.4	0.2	0.2	0.2	21	4.4	0.0	0.1
Average	8.1	8.1	8.2	8.1	7.9	7.3	6.3	6.5	7.3	9.4	9.3	9.5	10.3	10.3	9.2	8.8	9.2	10.0	10.5	9.9	8.1	7.5	7.3	7.5	24	21	3	8.5

Percentiles	10	20	30	40	50	60	70	80	90	95	99	100
Data	0.9	1.8	3.0	4.4	6.1	8.0	10.8	15.1	20.8	25.1	32.2	39.0

	Maximum
	39.0
	23.0
	8.5

Notes C - Calibration / Span Cycle NA - No Data Available T - Test A- MOE Audit M - Equipment Malfunction / Down R - Rate of Change

Figure D-1 Time History Plot of Measured 24-Hour Average $PM_{2.5}$ Concentrations – Courtice (WPCP) Station

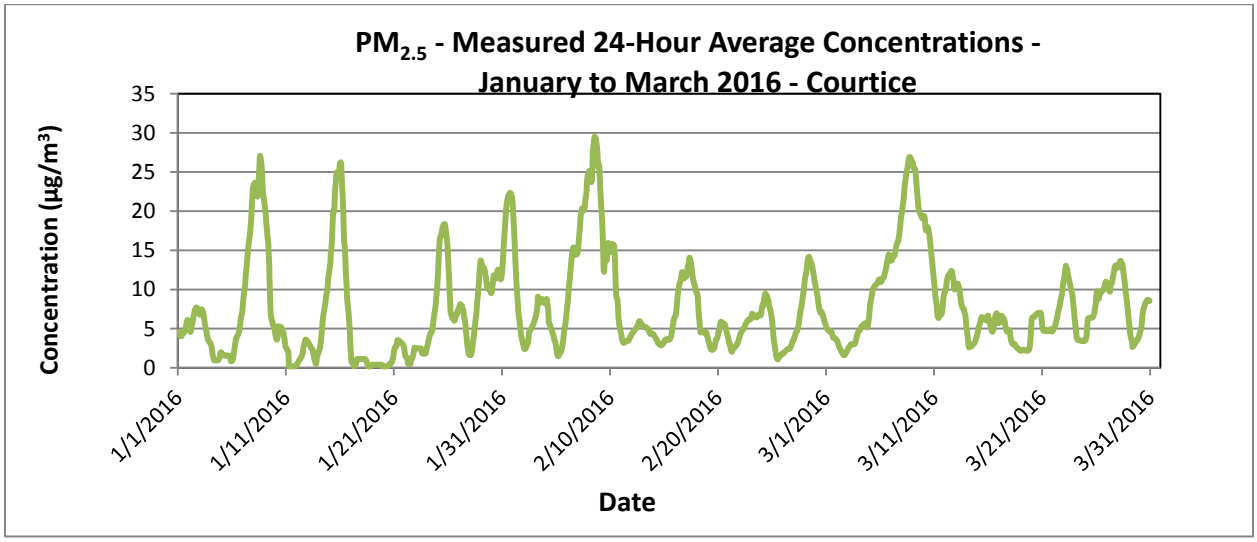
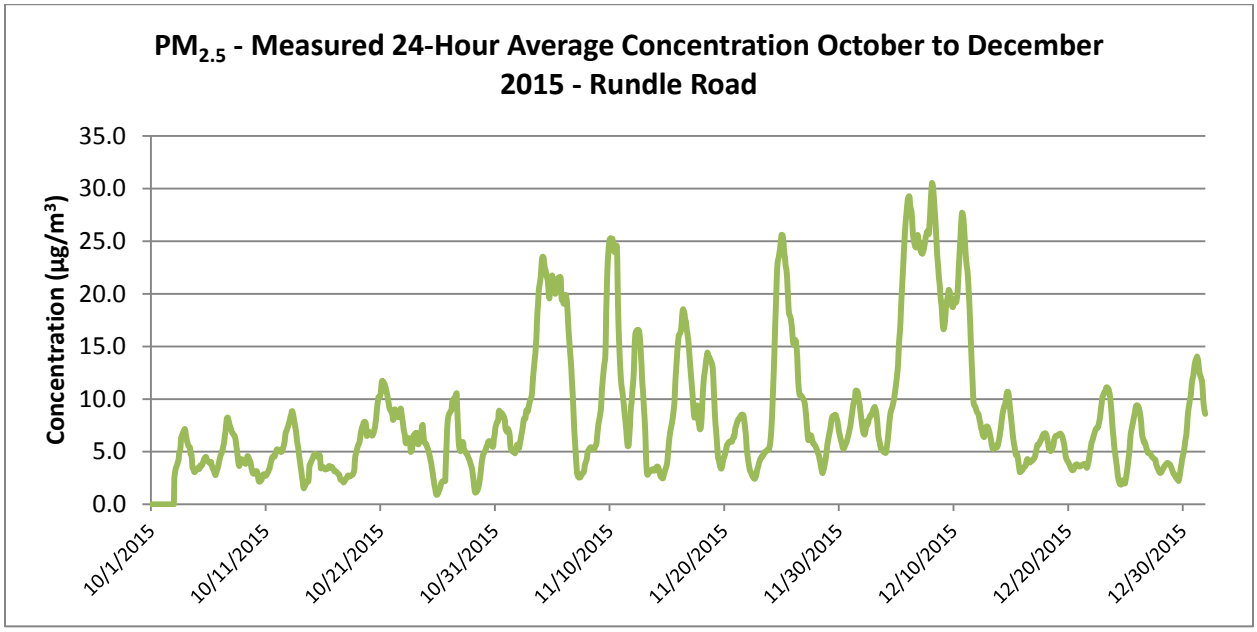


Figure D-2 Time History Plot of Measured 24-Hour Average $PM_{2.5}$ Concentrations – Rundle Road Station



Appendix E CONTINUOUS PARAMETER EDIT LOGS

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station (Upwind)**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**SO2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**		**Serial Number:**	**565**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	10-Feb-16	CL	Invalidate	29-Jan-16	07:00	29-Jan-16	10:00	Monthly calibration
2	10-Feb-16	CL	Invalidate	3-Feb-16	11:00	3-Feb-16	13:00	MOECC audit
3	16-Feb-16	TH	Invalidate	12-Feb-16	11:00	15-Feb-16	23:00	Data logger had been compromised. No data available.
4	23-Feb-16	TH	Invalidate	16-Feb-16	00:00	16-Feb-16	11:00	Data logger had been compromised. No data available.
5	26-Feb-16	TH	Invalidate	23-Feb-16	10:00	23-Feb-16	14:00	Monthly calibration
6	15-Mar-16	TH	Invalidate	11-Mar-16	10:00	11-Mar-16	13:00	Monthly calibration
7	25-Apr-16	TH	Invalidate	15-Apr-16	01:00	15-Apr-16	11:00	Pump and detector failed during monthly calibration. Upon review of minute data, pump and detector likely began to fail on April 15, 2016 at 01:24
8	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	21-Apr-16	10:00	Monitor removed for repairs and reinstalled on April 20, 2016. 24 hours of stabilization required before readings are valid
9	25-Apr-16	TH	Invalidate	21-Apr-16	11:00	21-Apr-16	13:00	Monthly calibration
10	9-May-16	TH	Zero Correction	21-Apr-16	18:00	29-Apr-16	08:00	Negative drift after calibration corrected on April 29, 2016. Rezeroed at -17.051ppb. Data from when negative drift affected readings were adjusted by this amount up to April 29, 2016

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**	**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**	**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**	**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**NOx**	**Instrument make & model:**	**API Model 200E Chemiluminescence Analyzer**			**Serial Number:**	**675**
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**	

Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd/mm/yyyy)	Hour (xx:xx)	Date (dd/mm/yyyy)	Hour (xx:xx)	
1	10-Feb-16	CL	Invalidate	29-Jan-16	07:00	29-Jan-16	11:00	Monthly calibration
2	10-Feb-16	CL	Invalidate	3-Feb-16	11:00	3-Feb-16	13:00	MOECC audit
3	16-Feb-16	TH	Invalidate	12-Feb-16	11:00	15-Feb-16	23:00	Data logger had been compromised. No data available.
4	23-Feb-16	TH	Invalidate	16-Feb-16	00:00	16-Feb-16	11:00	Data logger had been compromised. No data available.
5	26-Feb-16	TH	Invalidate	23-Feb-16	10:00	23-Feb-16	11:00	Monthly calibration
6	15-Mar-16	TH	Invalidate	11-Mar-16	10:00	11-Mar-16	12:00	Monthly calibration
7	28-Mar-16	TH	Replace	10-Mar-16	00:00	11-Mar-16	09:00	NO2, Nox and NO not adding up due to loose connection between monitor and
8	28-Mar-16	TH	Replace	11-Mar-16	13:00	24-Mar-16	10:00	logger. Data downloaded directly from monitor
9	25-Apr-16	TH	Invalidate	15-Apr-16	07:00	15-Apr-16	10:00	Monthly calibration
10	25-Apr-16	TH	Replace	16-Mar-16	18:00	16-Mar-16	18:00	NO replacement data from monitor was negative. Replaced with 0
11	25-Apr-16	TH	Replace	18-Mar-16	23:00	18-Mar-16	23:00	NO replacement data from monitor was negative. Replaced with 0
12	25-Apr-16	TH	Replace	19-Mar-16	14:00	19-Mar-16	14:00	NO2 and NOx replacement data from monitor was negative. Replaced with 0
13	25-Apr-16	TH	Replace	19-Mar-16	15:00	19-Mar-16	15:00	NO replacement data from monitor was negative. Replaced with 0
14	25-Apr-16	TH	Replace	19-Mar-16	18:00	19-Mar-16	18:00	NO replacement data from monitor was negative. Replaced with 0
15	25-Apr-16	TH	Replace	20-Mar-16	11:00	20-Mar-16	11:00	NO replacement data from monitor was negative. Replaced with 0
16	25-Apr-16	TH	Replace	20-Mar-16	13:00	20-Mar-16	13:00	NO replacement data from monitor was negative. Replaced with 0
17	25-Apr-16	TH	Replace	20-Mar-16	15:00	20-Mar-16	15:00	NO replacement data from monitor was negative. Replaced with 0
18	25-Apr-16	TH	Replace	20-Mar-16	17:00	20-Mar-16	17:00	NO replacement data from monitor was negative. Replaced with 0
19	25-Apr-16	TH	Replace	23-Mar-16	21:00	23-Mar-16	21:00	NO replacement data from monitor was negative. Replaced with 0
20	25-Apr-16	CL	Replace	1-Jan-16	00:00	6-Jan-16	13:00	NO2, NOx and NO not adding up due to loose connection between monitor and
21	25-Apr-16	CL	Replace	9-Jan-16	02:00	13-Jan-16	01:00	logger, and affecting NO2 readings. NO2 data replaced by NOx - NO.
22	25-Apr-16	CL	Replace	14-Jan-16	10:00	29-Jan-16	06:00	

Examples of Acceptable Edit Actions:

Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**PM2.5**	**Instrument make & model:**		**Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time Particulate Monitor**		**Serial Number:**	**E-1569**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**			**Time Zone : EST**	
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	10-Feb-16	CL	Invalidate	29-Jan-16	07:00	29-Jan-16	09:00	Monthly calibration
2	10-Feb-16	CL	Invalidate	3-Feb-16	11:00	3-Feb-16	13:00	MOECC audit
3	23-Feb-16	TH	Manual entry	12-Feb-16	11:00	16-Feb-16	11:00	Data logger compromised. Data was recovered directly from the montior.
4	26-Feb-16	TH	Invalidate	23-Feb-16	10:00	23-Feb-16	11:00	Monthly calibration
5	15-Mar-16	TH	Invalidate	11-Mar-16	10:00	11-Mar-16	12:00	Monthly calibration
6	25-Apr-16	TH	Invalidate	15-Apr-16	08:00	15-Apr-16	09:00	Monthly calibration

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Temperature**	**Instrument make & model:**		**Campbell Scientific Model HMP60**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	16-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Temperature is required for calculation of concentrations. Data entered here is from Rundle
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Temperature is required for calculation of concentrations. Data entered here is from Rundle

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Rainfall**	**Instrument make & model:**		**Texas Electronic TE525M**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	17-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Rainfall data entered here is from Rundle - added in for use in calculation of met data for non-continuous sampling bi-weekly report
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Rainfall data entered here is from Rundle - added in for use in calculation of met data for non-continuous sampling bi-weekly report
3	16-Apr-16	Timothy Hung	Invaldiate	12-Feb-16	11:00	16-Feb-16	11:00	Data logger compromised. Replace previously entered Rundle data with "M" based on machine malfunction

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Relative Humidity**	**Instrument make & model:**		**Campbell Scientific Model HMP60**			**Serial Number:**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	17-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Relative humidity data entered here is from Rundle - added in for use in calculation of met data for non-continuous sampling bi-weekly report
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Relative humidity data entered here is from Rundle - added in for use in calculation of met data for non-continuous sampling bi-weekly report
3	16-Apr-16	Timothy Hung	Invaldiate	12-Feb-16	11:00	16-Feb-16	11:00	Data logger comprimised. Replace previously entered Rundle data with "M" based on machine malfunction

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Atmospheric Pressure**	**Instrument make & model:**		**Campbell Scientific Model CS106**			**Serial Number:**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	
1	16-Feb-16	Timothy Hung	Manual Entry	12-Feb-16	11:00	15-Feb-16	23:00	Pressure is required for calculation of concentrations. Data entered here is from the Oshawa airport
2	23-Feb-16	Timothy Hung	Manual Entry	16-Feb-16	00:00	16-Feb-16	11:00	Pressure is required for calculation of concentrations. Data entered here is from the Oshawa airport

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Lisa Heatherington**		**Phone:**	**N/A**	**E-mail:**	**Lisa.Hetherington@Durham.ca**		
Station number:	**N/A**		**Station Name:**	**Courtice WPCP Station**				
Station address:	**Courtice Water Pollution Control Plant**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Wind Speed/Wind direction**	**Instrument make & model:**		**N/A**			**Serial Number:**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**		**Time Zone : EST**		
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd/mm/yyyy)	**Hour (xx:xx)**	**Date (dd/mm/yyyy)**	**Hour (xx:xx)**	

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**	
Station number:	**45200**		**Station Name:**	**Rundle Road Station**			
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**			
Pollutant or parameter:	**SO2**	**Instrument make & model:**		**Teledyne Monitor Labs Sulphur Dioxide Analyzer Model T100**		**Serial Numb**	**565**
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**		

Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Feb-16	CL	Invalidate	29-Jan-16	12:00	29-Jan-16	17:00	Monthly calibration and repair pump diaphragm
2	11-Feb-16	CL	Invalidate	3-Feb-16	14:00	3-Feb-16	15:00	MOECC audit
3	26-Feb-16	TH	Invalidate	23-Feb-16	07:00	23-Feb-16	09:00	Monthly calibration
4	14-Mar-16	TH	Invalidate	11-Mar-16	07:00	11-Mar-16	08:00	Monthly calibration
5	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage
6	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	15:00	Monthly calibration

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**						
Contact	**Greg Crooks / Connie Lim / Tim Hung**	**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**	**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**	**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or para	**NOx**	**Instrument make & model:**	**API Model 200E Chemiluminescence Analyzer**		**Serial Numb**	**675**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**		

Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Feb-16	CL	Invalidate	29-Jan-16	12:00	29-Jan-16	13:00	Monthly calibration
2	11-Feb-16	CL	Invalidate	3-Feb-16	14:00	3-Feb-16	15:00	MOECC audit
3	26-Feb-16	TH	Invalidate	23-Feb-16	07:00	23-Feb-16	09:00	Monthly calibration
4	14-Mar-16	TH	Invalidate	11-Mar-16	07:00	11-Mar-16	09:00	Monthly calibration
5	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage
6	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	13:00	Monthly calibration

Examples of Acceptable Edit Actions:

Add offset of	Invalidating span & zero check data
Delete hours	Invalidating data due to equipment malfunctions and power failures.
Zero Correction	Invalidating data when instrumentation off-line
Slope Correction	Marking data as out-of-range
Manual data entry for missing, but collected data	

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**PM2.5**	**Instrument make & model:**		**Thermo Sharp 5030 Synchronized Hybrid Ambient Real-time**		**Serial Number:**	**E-1569**	
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**			

Edit #	Edit date	Editor's Name	Edit Action	Starting		Ending		Reason
				Date (dd-mm-yy)	Hour (xx:xx)	Date (dd-mm-yy)	Hour (xx:xx)	
1	11-Feb-16	CL	Invalidate	29-Jan-16	12:00	29-Jan-16	13:00	Monthly calibration
2	11-Feb-16	CL	Invalidate	3-Feb-16	14:00	3-Feb-16	15:00	MOECC audit
3	12-Feb-16	TH	Replace	31-Jan-16	01:00	3-Feb-16	13:00	The physical connection between the monitor and data logger was broken. Data was downloaded directly off the monitor
4	12-Feb-16	TH	Replace	3-Feb-16	16:00	10-Feb-16	13:00	
5	12-Feb-16	TH	Invalidate	10-Feb-16	14:00	10-Feb-16	14:00	Monitor repairs
6	12-Feb-16	TH	Invalidate	15-Jan-16	20:00	29-Jan-16	11:00	Blown fuse - removed unit for repairs. No data collected
7	12-Feb-16	TH	Invalidate	29-Jan-16	14:00	29-Jan-16	16:00	Reinstall monitor
8	26-Feb-16	TH	Invalidate	23-Feb-16	07:00	23-Feb-16	09:00	Monthly calibration
9	14-Mar-16	TH	Invalidate	11-Mar-16	07:00	11-Mar-16	09:00	Monthly calibration
10	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage
11	25-Apr-16	TH	Invalidate	15-Apr-16	12:00	15-Apr-16	13:00	Monthly calibration

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Temperature**	**Instrument make & model:**		**Campbell Scientific Model HMP60**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**			
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Rainfall**	**Instrument make & model:**		**Texas Electronic TE525M**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**			
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Relative Humidity**	**Instrument make & model:**		**Campbell Scientific Model HMP60**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**			
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage

EDIT LOG TABLE

Project Name	**Durham York Energy Centre Ambient Air Monitoring Program**							
Contact	**Greg Crooks / Connie Lim / Tim Hung**		**Phone:**	**905-944-7777**	**E-mail:**	**greg.crooks@stantec.com, connie.lim@stantec.com, tim.hung@stantec.com**		
Station number:	**45200**		**Station Name:**	**Rundle Road Station**				
Station address:	**Rundle Road / Baseline Road**		**Emitter Address:**	**The Region of Durham, 605 Rossland Rd, Whitby, ON**				
Pollutant or parameter:	**Wind Speed/Wind Direction**	**Instrument make & model:**		**Met One Instruments Inc. Model 034B**		**Serial Number:**		
Data edit period	**Start date:**	**1-Jan-16**	**End date:**	**31-Mar-16**	**Time Zone : EST**			
Edit #	**Edit date**	**Editor's Name**	**Edit Action**	**Starting**		**Ending**		**Reason**
				Date (dd-mm-yy)	**Hour (xx:xx)**	**Date (dd-mm-yy)**	**Hour (xx:xx)**	
1	11-Apr-16	TH	Invalidate	29-Mar-16	03:00	29-Mar-16	03:00	Invalidate due to half-hour power outage
2	11-Apr-16	TH	Invalidate	24-Mar-16	03:00	25-Mar-16	06:00	Anemometer frozen

Examples of Acceptable Edit Actions:
Add offset of
Delete hours
Zero Correction
Slope Correction
Manual data entry for missing, but collected data
Invalidating span & zero check data
Invalidating data due to equipment malfunctions and power failures.
Invalidating data when instrumentation off-line
Marking data as out-of-range

Appendix F METALS DATA SUMMARY

Metals and Total Particulates	Courtice WPCP Station																					
Location			Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice		Courtice	
Date	dd/mm/yyyy		06/02/2016		12/02/2016		18/02/2016		24/02/2016		01/03/2016		07/03/2016		13/03/2016		19/03/2016		25/03/2016		31/03/2016	
Start Time	hh:mm		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes		24.24		22.45		23.89		23.99		23.39		23.45		23.53		23.79		23.83		23.97	
Technician			TH		TH		TH		TH		TH		TH		TH		TH		TH		TH	
Filter Number			16011167		16011171		16012921		16012925		16020441		16020446		16021138		16021142		16021190		16021193	
Analytical Report #			B628201		B632676		B635984		B639770		B644843		B651418		B652140		B659620		B662553		B665821	
Total Volumetric Flow	Am^3/sample		1680.43		1499.24		1529.46		1557.55		1637.38		1656.89		1685.80		1741.25		1480.94		1508.51	
Analytical Results	**Units**		**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg		37.0	5	35.8	5	27.4	5.0	14.4	5.0	30.1	5.0	49.2	5.0	21.3	5.0	26.9	5.0	28	5	19.7	5.0
Total Mercury (Hg)	µg		0.02	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg		130	50	125	50	78	50	53	50	86	50	115	50	91	50	124	50	148	50	100	50
Antimony (Sb)	µg		<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg		<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg		10.8	1.0	7.8	1.0	9.9	1.0	5.2	1.0	4.8	1.0	13.4	1.0	7.0	1.0	9.4	1.0	10.8	1.0	6.6	1.0
Beryllium (Be)	µg		<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg		<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg		<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg		<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg		<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	5.2	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Cobalt (Co)	µg		<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg		105	5.0	87.9	5.0	122	5.0	15.2	5.0	34.8	5.0	111	5.0	63.1	5.0	95.3	5.0	188	5.0	102	5.0
Iron (Fe)	µg		339	50	363	50	299	50	141	50	240	50	634	50	485	50	720	50	468	50	227	50
Lead (Pb)	µg		4.1	3.0	3.5	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	7.6	3.0	<3.0	3.0	<3.0	3.0	3.6	3.0	3.2	3.0
Magnesium (Mg)	µg		200	50	207	50	153	50	86	50	134	50	282	50	147	50	199	50	171	50	129	50
Manganese (Mn)	µg		12.0	1.0	44.5	1.0	6.6	1.0	4.3	1.0	7.0	1.0	22.7	1.0	9.5	1.0	13.9	1.0	9.5	1.0	8.4	1.0
Molybdenum (Mo)	µg		<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	3.3	3.0	<3.0	3.0	<3.0	3.0	4.6	3.0	<3.0	3.0
Nickel (Ni)	µg		<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg		<25	25	<25	25	<25	25	<25	25	<25	25	<25	25	89	25	<25	25	<25	25	<25	25
Selenium (Se)	µg		<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg		<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg		4.5	1.0	4.4	1.0	6.0	1.0	2.5	1.0	3.2	1.0	5.8	1.0	5.4	1.0	6.6	1.0	5.7	1.0	2.8	1.0
Thallium (Tl)	µg		<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg		<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg		<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	10	10	<10	10
Vanadium (V)	µg		<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg		42.5	5.0	52.8	5.0	20.0	5.0	21.1	5.0	14.9	5.0	79.9	5.0	19.3	5.0	18.3	5.0	22.8	5.0	25.1	5.0
Zirconium (Zr)	µg		<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg		<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Quarter 1			Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice	Courtice
				1	2	3	4	5	6	7	8	9	10
	Units	Maximum	Minimum	2/6/2016	2/12/2016	2/18/2016	2/24/2016	3/1/2016	3/7/2016	3/13/2016	3/19/2016	3/25/2016	3/31/2016
Particulate	$µg/m^3$	29.7	9.2	22.018	23.879	17.915	9.245	18.383	29.694	12.635	15.449	18.907	13.059
Total Mercury (Hg)	$µg/m^3$	1.33E-05	5.74E-06	1.19E-05	1.33E-05	6.54E-06	6.42E-06	1.22E-05	6.04E-06	5.93E-06	5.74E-06	6.75E-06	6.63E-06
Aluminum (Al)	$µg/m^3$	9.99E-02	3.40E-02	7.74E-02	8.34E-02	5.10E-02	3.40E-02	5.25E-02	6.94E-02	5.40E-02	7.12E-02	9.99E-02	6.63E-02
Antimony (Sb)	$µg/m^3$	3.38E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	3.38E-03	3.31E-03
Arsenic (As)	$µg/m^3$	2.03E-03	1.72E-03	1.79E-03	2.00E-03	1.96E-03	1.93E-03	1.83E-03	1.81E-03	1.78E-03	1.72E-03	2.03E-03	1.99E-03
Barium (Ba)	$µg/m^3$	8.09E-03	2.93E-03	6.43E-03	5.20E-03	6.47E-03	3.34E-03	2.93E-03	8.09E-03	4.15E-03	5.40E-03	7.29E-03	4.38E-03
Beryllium (Be)	$µg/m^3$	3.38E-04	2.87E-04	2.98E-04	3.34E-04	3.27E-04	3.21E-04	3.05E-04	3.02E-04	2.97E-04	2.87E-04	3.38E-04	3.31E-04
Bismuth (Bi)	$µg/m^3$	2.03E-03	1.72E-03	1.79E-03	2.00E-03	1.96E-03	1.93E-03	1.83E-03	1.81E-03	1.78E-03	1.72E-03	2.03E-03	1.99E-03
Boron (B)	$µg/m^3$	2.03E-03	1.72E-03	1.79E-03	2.00E-03	1.96E-03	1.93E-03	1.83E-03	1.81E-03	1.78E-03	1.72E-03	2.03E-03	1.99E-03
Cadmium (Cd)	$µg/m^3$	6.75E-04	5.74E-04	5.95E-04	6.67E-04	6.54E-04	6.42E-04	6.11E-04	6.04E-04	5.93E-04	5.74E-04	6.75E-04	6.63E-04
Chromium (Cr)	$µg/m^3$	3.08E-03	1.44E-03	1.49E-03	1.67E-03	1.63E-03	1.61E-03	1.53E-03	1.51E-03	3.08E-03	1.44E-03	1.69E-03	1.66E-03
Cobalt (Co)	$µg/m^3$	6.75E-04	5.74E-04	5.95E-04	6.67E-04	6.54E-04	6.42E-04	6.11E-04	6.04E-04	5.93E-04	5.74E-04	6.75E-04	6.63E-04
Copper (Cu)	$µg/m^3$	1.27E-01	9.76E-03	6.25E-02	5.86E-02	7.98E-02	9.76E-03	2.13E-02	6.70E-02	3.74E-02	5.47E-02	1.27E-01	6.76E-02
Iron (Fe)	$µg/m^3$	4.13E-01	9.05E-02	2.02E-01	2.42E-01	1.95E-01	9.05E-02	1.47E-01	3.83E-01	2.88E-01	4.13E-01	3.16E-01	1.50E-01
Lead (Pb)	$µg/m^3$	4.59E-03	8.61E-04	2.44E-03	2.33E-03	9.81E-04	9.63E-04	9.16E-04	4.59E-03	8.90E-04	8.61E-04	2.43E-03	2.12E-03
Magnesium (Mg)	$µg/m^3$	1.70E-01	5.52E-02	1.19E-01	1.38E-01	1.00E-01	5.52E-02	8.18E-02	1.70E-01	8.72E-02	1.14E-01	1.15E-01	8.55E-02
Manganese (Mn)	$µg/m^3$	2.97E-02	2.76E-03	7.14E-03	2.97E-02	4.32E-03	2.76E-03	4.28E-03	1.37E-02	5.64E-03	7.98E-03	6.41E-03	5.57E-03
Molybdenum (Mo)	$µg/m^3$	3.11E-03	8.61E-04	8.93E-04	1.00E-03	9.81E-04	9.63E-04	9.16E-04	1.99E-03	8.90E-04	8.61E-04	3.11E-03	9.94E-04
Nickel (Ni)	$µg/m^3$	1.01E-03	8.61E-04	8.93E-04	1.00E-03	9.81E-04	9.63E-04	9.16E-04	9.05E-04	8.90E-04	8.61E-04	1.01E-03	9.94E-04
Phosphorus (P)	$µg/m^3$	5.28E-02	7.18E-03	7.44E-03	8.34E-03	8.17E-03	8.03E-03	7.63E-03	7.54E-03	5.28E-02	7.18E-03	8.44E-03	8.29E-03
Selenium (Se)	$µg/m^3$	3.38E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	3.38E-03	3.31E-03
Silver (Ag)	$µg/m^3$	1.69E-03	1.44E-03	1.49E-03	1.67E-03	1.63E-03	1.61E-03	1.53E-03	1.51E-03	1.48E-03	1.44E-03	1.69E-03	1.66E-03
Strontium (Sr)	$µg/m^3$	3.92E-03	1.61E-03	2.68E-03	2.93E-03	3.92E-03	1.61E-03	1.95E-03	3.50E-03	3.20E-03	3.79E-03	3.85E-03	1.86E-03
Thallium (Tl)	$µg/m^3$	3.38E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	3.38E-03	3.31E-03
Tin (Sn)	$µg/m^3$	3.38E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	3.38E-03	3.31E-03
Titanium (Ti)	$µg/m^3$	6.75E-03	2.87E-03	2.98E-03	3.34E-03	3.27E-03	3.21E-03	3.05E-03	3.02E-03	2.97E-03	2.87E-03	6.75E-03	3.31E-03
Vanadium (V)	$µg/m^3$	1.69E-03	1.44E-03	1.49E-03	1.67E-03	1.63E-03	1.61E-03	1.53E-03	1.51E-03	1.48E-03	1.44E-03	1.69E-03	1.66E-03
Zinc (Zn)	$µg/m^3$	4.82E-02	9.10E-03	2.53E-02	3.52E-02	1.31E-02	1.35E-02	9.10E-03	4.82E-02	1.14E-02	1.05E-02	1.54E-02	1.66E-02
Zirconium (Zr)	$µg/m^3$	1.69E-03	1.44E-03	1.49E-03	1.67E-03	1.63E-03	1.61E-03	1.53E-03	1.51E-03	1.48E-03	1.44E-03	1.69E-03	1.66E-03
Total Uranium (U)	$µg/m^3$	1.52E-04	1.29E-04	1.34E-04	1.50E-04	1.47E-04	1.44E-04	1.37E-04	1.36E-04	1.33E-04	1.29E-04	1.52E-04	1.49E-04

*Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

Metals and Total Particulates	Rundle Station	Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle		Rundle	
Location		06/02/2016		12/02/2016		18/02/2016		24/02/2016		01/03/2016		07/03/2016		13/03/2016		19/03/2016		25/03/2016		31/03/2016	
Date	dd/mm/yyyy																				
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.55		23.07		24.15		23.46		23.63		22.86		23.68		23.75		23.61		24.37	
Technician		TH		TH		TH		TH		TH		TH		TH		TH		TH		TH	
Filter Number		16011168		16011172		16012922		16012926		16020442		16020445		16021139		16021143		16021189		16021194	
Analytical Report #		B628201		B632676		B635984		B639770		B644843		B651418		B652140		B659620		B662553		B665821	
Total Volumetric Flow	Am^3/sample	1687.04		1611.60		1743.96		1713.09		1681.38		1666.86		1728.39		1655.21		1708.17		1802.72	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg	35.1	5.0	51.2	5	41.9	5.0	16.6	5.0	30.7	5.0	52.9	5.0	21.9	5.0	23.0	5.0	23.5	5	24.8	5
Total Mercury (Hg)	µg	<0.02	0.02	0.03	0.02	0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg	132	50	227	50	178	50	86	50	83	50	181	50	99	50	103	50	104	50	123	50
Antimony (Sb)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg	11.0	1.0	10.4	1.0	9.5	1.0	4.6	1.0	4.6	1.0	16.1	1.0	8.4	1.0	7.2	1.0	7.0	1.0	10.2	1.0
Beryllium (Be)	µg	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Chromium (Cr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Cobalt (Co)	µg	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg	97.6	5.0	20.9	5.0	110	5.0	21.9	5.0	29.7	5.0	51.5	5.0	38.7	5.0	57.1	5.0	92.5	5.0	51.9	5.0
Iron (Fe)	µg	391	50	629	50	426	50	227	50	275	50	798	50	548	50	353	50	269	50	423	50
Lead (Pb)	µg	4.0	3.0	4.2	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	7.1	3.0	3.1	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Magnesium (Mg)	µg	233	50	389	50	277	50	95	50	136	50	313	50	157	50	164	50	149	50	161	50
Manganese (Mn)	µg	13.9	1.0	31.1	1.0	13.6	1.0	5.7	1.0	8.0	1.0	28.0	1.0	12.6	1.0	10.6	1.0	9.9	1.0	11.9	1.0
Molybdenum (Mo)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Nickel (Ni)	µg	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg	<25	25	26	25	<25	25	<25	25	<25	25	31	25	88	25	<25	25	<25	25	29	25
Selenium (Se)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg	4.2	1.0	8.6	1.0	11.6	1.0	2.7	1.0	3.2	1.0	7.8	1.0	4.6	1.0	5.2	1.0	4.0	1.0	4.2	1.0
Thallium (Tl)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg	<10	10	13	10	12	10	<10	10	<10	10	11	10	<10	10	<10	10	<10	10	<10	10
Vanadium (V)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg	46.2	5.0	55.4	5.0	20.6	5.0	17.1	5.0	13.5	5.0	85.8	5.0	27.9	5.0	12.9	5.0	25.3	5.0	22.6	5.0
Zirconium (Zr)	µg	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Quarter 1			Rundle 1	Rundle 2	Rundle 3	Rundle 4	Rundle 5	Rundle 6	Rundle 7	Rundle 8	Rundle 9	Rundle 10
	Units	Maximum	Minimum	2/6/2016	2/12/2016	2/18/2016	2/24/2016	3/1/2016	3/7/2016	3/13/2016	3/19/2016	3/25/2016	3/31/2016
Particulate	$µg/m^3$	31.8	9.7	20.806	31.770	24.026	9.690	18.259	31.736	12.671	13.896	13.757	13.757
Total Mercury (Hg)	$µg/m^3$	1.86E-05	5.55E-06	5.93E-06	1.86E-05	1.15E-05	5.84E-06	5.95E-06	6.00E-06	5.79E-06	6.04E-06	5.85E-06	5.55E-06
Aluminum (Al)	$µg/m^3$	1.41E-01	4.94E-02	7.82E-02	1.41E-01	1.02E-01	5.02E-02	4.94E-02	1.09E-01	5.73E-02	6.22E-02	6.09E-02	6.82E-02
Antimony (Sb)	$µg/m^3$	3.10E-03	2.77E-03	2.96E-03	3.10E-03	2.87E-03	2.92E-03	2.97E-03	3.00E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03
Arsenic (As)	$µg/m^3$	1.86E-03	1.66E-03	1.78E-03	1.86E-03	1.72E-03	1.75E-03	1.78E-03	1.80E-03	1.74E-03	1.81E-03	1.76E-03	1.66E-03
Barium (Ba)	$µg/m^3$	9.66E-03	2.69E-03	6.52E-03	6.45E-03	5.45E-03	2.69E-03	2.74E-03	9.66E-03	4.86E-03	4.35E-03	4.10E-03	5.66E-03
Beryllium (Be)	$µg/m^3$	3.10E-04	2.77E-04	2.96E-04	3.10E-04	2.87E-04	2.92E-04	2.97E-04	3.00E-04	2.89E-04	3.02E-04	2.93E-04	2.77E-04
Bismuth (Bi)	$µg/m^3$	1.86E-03	1.66E-03	1.78E-03	1.86E-03	1.72E-03	1.75E-03	1.78E-03	1.80E-03	1.74E-03	1.81E-03	1.76E-03	1.66E-03
Boron (B)	$µg/m^3$	1.86E-03	1.66E-03	1.78E-03	1.86E-03	1.72E-03	1.75E-03	1.78E-03	1.80E-03	1.74E-03	1.81E-03	1.76E-03	1.66E-03
Cadmium (Cd)	$µg/m^3$	6.21E-04	5.55E-04	5.93E-04	6.21E-04	5.73E-04	5.84E-04	5.95E-04	6.00E-04	5.79E-04	6.04E-04	5.85E-04	5.55E-04
Chromium (Cr)	$µg/m^3$	1.55E-03	1.39E-03	1.48E-03	1.55E-03	1.43E-03	1.46E-03	1.49E-03	1.50E-03	1.45E-03	1.51E-03	1.46E-03	1.39E-03
Cobalt (Co)	$µg/m^3$	6.21E-04	5.55E-04	5.93E-04	6.21E-04	5.73E-04	5.84E-04	5.95E-04	6.00E-04	5.79E-04	6.04E-04	5.85E-04	5.55E-04
Copper (Cu)	$µg/m^3$	6.31E-02	1.28E-02	5.79E-02	1.30E-02	6.31E-02	1.28E-02	1.77E-02	3.09E-02	2.24E-02	3.45E-02	5.42E-02	2.88E-02
Iron (Fe)	$µg/m^3$	4.79E-01	1.33E-01	2.32E-01	3.90E-01	2.44E-01	1.33E-01	1.64E-01	4.79E-01	3.17E-01	2.13E-01	1.57E-01	2.35E-01
Lead (Pb)	$µg/m^3$	4.26E-03	8.32E-04	2.37E-03	2.61E-03	8.60E-04	8.76E-04	8.92E-04	4.26E-03	1.79E-03	9.06E-04	8.78E-04	8.32E-04
Magnesium (Mg)	$µg/m^3$	2.41E-01	5.55E-02	1.38E-01	2.41E-01	1.59E-01	5.55E-02	8.09E-02	1.88E-01	9.08E-02	9.91E-02	8.72E-02	8.93E-02
Manganese (Mn)	$µg/m^3$	1.93E-02	3.33E-03	8.24E-03	1.93E-02	7.80E-03	3.33E-03	4.76E-03	1.68E-02	7.29E-03	6.40E-03	5.80E-03	6.60E-03
Molybdenum (Mo)	$µg/m^3$	9.31E-04	8.32E-04	8.89E-04	9.31E-04	8.60E-04	8.76E-04	8.92E-04	9.00E-04	8.68E-04	9.06E-04	8.78E-04	8.32E-04
Nickel (Ni)	$µg/m^3$	9.31E-04	8.32E-04	8.89E-04	9.31E-04	8.60E-04	8.76E-04	8.92E-04	9.00E-04	8.68E-04	9.06E-04	8.78E-04	8.32E-04
Phosphorus (P)	$µg/m^3$	5.09E-02	7.17E-03	7.41E-03	1.61E-02	7.17E-03	7.30E-03	7.43E-03	1.86E-02	5.09E-02	7.55E-03	7.32E-03	1.61E-02
Selenium (Se)	$µg/m^3$	3.10E-03	2.77E-03	2.96E-03	3.10E-03	2.87E-03	2.92E-03	2.97E-03	3.00E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03
Silver (Ag)	$µg/m^3$	1.55E-03	1.39E-03	1.48E-03	1.55E-03	1.43E-03	1.46E-03	1.49E-03	1.50E-03	1.45E-03	1.51E-03	1.46E-03	1.39E-03
Strontium (Sr)	$µg/m^3$	6.65E-03	1.58E-03	2.49E-03	5.34E-03	6.65E-03	1.58E-03	1.90E-03	4.68E-03	2.66E-03	3.14E-03	2.34E-03	2.33E-03
Thallium (Tl)	$µg/m^3$	3.10E-03	2.77E-03	2.96E-03	3.10E-03	2.87E-03	2.92E-03	2.97E-03	3.00E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03
Tin (Sn)	$µg/m^3$	3.10E-03	2.77E-03	2.96E-03	3.10E-03	2.87E-03	2.92E-03	2.97E-03	3.00E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03
Titanium (Ti)	$µg/m^3$	8.07E-03	2.77E-03	2.96E-03	8.07E-03	6.88E-03	2.92E-03	2.97E-03	6.60E-03	2.89E-03	3.02E-03	2.93E-03	2.77E-03
Vanadium (V)	$µg/m^3$	1.55E-03	1.39E-03	1.48E-03	1.55E-03	1.43E-03	1.46E-03	1.49E-03	1.50E-03	1.45E-03	1.51E-03	1.46E-03	1.39E-03
Zinc (Zn)	$µg/m^3$	5.15E-02	7.79E-03	2.74E-02	3.44E-02	1.18E-02	9.98E-03	8.03E-03	5.15E-02	1.61E-02	7.79E-03	1.48E-02	1.25E-02
Zirconium (Zr)	$µg/m^3$	1.55E-03	1.39E-03	1.48E-03	1.55E-03	1.43E-03	1.46E-03	1.49E-03	1.50E-03	1.45E-03	1.51E-03	1.46E-03	1.39E-03
Total Uranium (U)	$µg/m^3$	1.40E-04	1.25E-04	1.33E-04	1.40E-04	1.29E-04	1.31E-04	1.34E-04	1.35E-04	1.30E-04	1.36E-04	1.32E-04	1.25E-04

*Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

Metals and Total Particulates	Fenceline Station																			
Location			Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline		Fenceline	
Date	dd/mm/yyyy		06/02/2016		12/02/2016		18/02/2016		24/02/2016		01/03/2016		07/03/2016		13/03/2016		19/03/2016		25/03/2016		31/03/2016	
Start Time	hh:mm		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes		23.05		24.82		23.46		23.68		23.84		24		25.15		22.89		24.25		23.69	
Technician			TH		TH		TH		TH		TH		TH		TH		TH		TH		TH	
Filter Number			16011169		16011173		16012923		16012927		16020443		16020447		16021140		16021144		16021191		16021195	
Analytical Report #			B628201		B632676		B635984		B639770		B644843		B651418		B652140		B659620		B662553		B665821	
Total Volumetric Flow	Am^3/sample		Flow rate outside of allowable limit		Flow rate outside of allowable limit		1611.47		1733.83		1485.00		1524.74		1629.55		1488.63		1560.13		1695.76	
Analytical Results	**Units**		**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Particulate	mg						82.7	5.0	22.9	5.0	46.3	5.0	69.8	5.0	34.0	5.0	27.1	5.0	28.1	5	29.2	5.0
Total Mercury (Hg)	µg						0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02
Aluminum (Al)	µg						155	50	91	50	125	50	193	50	302	50	140	50	185	50	137	50
Antimony (Sb)	µg						<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Arsenic (As)	µg						<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Barium (Ba)	µg						9.7	1.0	5.6	1.0	5.9	1.0	16.9	1.0	16.1	1.0	7.5	1.0	9.4	1.0	8.6	1.0
Beryllium (Be)	µg						<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0
Bismuth (Bi)	µg						<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Boron (B)	µg						<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0	<6.0	6.0
Cadmium (Cd)	µg						<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	3.3	2.0	9.7	2.0	19.2	2.0
Chromium (Cr)	µg						<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	13.4	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Cobalt (Co)	µg						<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Copper (Cu)	µg						31.1	5.0	55.6	5.0	47.4	5.0	52.0	5.0	66.8	5.0	34.3	5.0	61.2	5.0	68.9	5.0
Iron (Fe)	µg						488	50	175	50	282	50	759	50	1490	50	590	50	356	50	332	50
Lead (Pb)	µg						<3.0	3.0	4.2	3.0	<3.0	3.0	10.2	3.0	4.5	3.0	<3.0	3.0	4.4	3.0	5.6	3.0
Magnesium (Mg)	µg						355	50	139	50	180	50	410	50	251	50	250	50	194	50	216	50
Manganese (Mn)	µg						17.6	1.0	8.1	1.0	9.2	1.0	32.4	1.0	18.4	1.0	18.4	1.0	10.8	1.0	14.6	1.0
Molybdenum (Mo)	µg						<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Nickel (Ni)	µg						<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0	<3.0	3.0
Phosphorus (P)	µg						<25	25	<25	25	<25	25	37	25	544	25	<25	25	<25	25	<25	25
Selenium (Se)	µg						<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Silver (Ag)	µg						<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Strontium (Sr)	µg						20.6	1.0	3.2	1.0	5.0	1.0	10.9	1.0	9.3	1.0	6.9	1.0	6.0	1.0	5.0	1.0
Thallium (Tl)	µg						<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Tin (Sn)	µg						<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10	<10	10
Titanium (Ti)	µg						<10	10	<10	10	<10	10	11	10	28	10	<10	10	<10	10	<10	10
Vanadium (V)	µg						<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Zinc (Zn)	µg						32.2	5.0	48.9	5.0	19.6	5.0	113	5.0	34.8	5.0	20.5	5.0	27.2	5.0	73.7	5.0
Zirconium (Zr)	µg						<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Total Uranium (U)	µg						<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45	<0.45	0.45

Calculated Concentrations	Quarter 1			Fenceline 1	Fenceline 2	Fenceline 3	Fenceline 4	Fenceline 5	Fenceline 6	Fenceline 7	Fenceline 8	Fenceline 9	Fenceline 10
	Units	**Maximum**	**Minimum**	**2/6/2016**	**2/12/2016**	**2/18/2016**	**2/24/2016**	**3/1/2016**	**3/7/2016**	**3/13/2016**	**3/19/2016**	**3/25/2016**	**3/31/2016**
Particulate	$\mu g/m^3$	51.3	13.2	-	-	51.320	13.208	31.179	45.778	20.865	18.205	18.011	17.219
Total Mercury (Hg)	$\mu g/m^3$	1.24E-05	5.77E-06	-	-	1.24E-05	5.77E-06	6.73E-06	6.56E-06	6.14E-06	6.72E-06	6.41E-06	5.90E-06
Aluminum (Al)	$\mu g/m^3$	1.85E-01	5.25E-02	-	-	9.62E-02	5.25E-02	8.42E-02	1.27E-01	1.85E-01	9.40E-02	1.19E-01	8.08E-02
Antimony (Sb)	$\mu g/m^3$	3.37E-03	2.88E-03	-	-	3.10E-03	2.88E-03	3.37E-03	3.28E-03	3.07E-03	3.36E-03	3.20E-03	2.95E-03
Arsenic (As)	$\mu g/m^3$	2.02E-03	1.73E-03	-	-	1.86E-03	1.73E-03	2.02E-03	1.97E-03	1.84E-03	2.02E-03	1.92E-03	1.77E-03
Barium (Ba)	$\mu g/m^3$	1.11E-02	3.23E-03	-	-	6.02E-03	3.23E-03	3.97E-03	1.11E-02	9.88E-03	5.04E-03	6.03E-03	5.07E-03
Beryllium (Be)	$\mu g/m^3$	3.37E-04	2.88E-04	-	-	3.10E-04	2.88E-04	3.37E-04	3.28E-04	3.07E-04	3.36E-04	3.20E-04	2.95E-04
Bismuth (Bi)	$\mu g/m^3$	2.02E-03	1.73E-03	-	-	1.86E-03	1.73E-03	2.02E-03	1.97E-03	1.84E-03	2.02E-03	1.92E-03	1.77E-03
Boron (B)	$\mu g/m^3$	2.02E-03	1.73E-03	-	-	1.86E-03	1.73E-03	2.02E-03	1.97E-03	1.84E-03	2.02E-03	1.92E-03	1.77E-03
Cadmium (Cd)	$\mu g/m^3$	1.13E-02	5.77E-04	-	-	6.21E-04	5.77E-04	6.73E-04	6.56E-04	6.14E-04	2.22E-03	6.22E-03	1.13E-02
Chromium (Cr)	$\mu g/m^3$	8.22E-03	1.44E-03	-	-	1.55E-03	1.44E-03	1.68E-03	1.64E-03	8.22E-03	1.68E-03	1.60E-03	1.47E-03
Cobalt (Co)	$\mu g/m^3$	6.73E-04	5.77E-04	-	-	6.21E-04	5.77E-04	6.73E-04	6.56E-04	6.14E-04	6.72E-04	6.41E-04	5.90E-04
Copper (Cu)	$\mu g/m^3$	4.10E-02	1.93E-02	-	-	1.93E-02	3.21E-02	3.19E-02	3.41E-02	4.10E-02	2.30E-02	3.92E-02	4.06E-02
Iron (Fe)	$\mu g/m^3$	9.14E-01	1.01E-01	-	-	3.03E-01	1.01E-01	1.90E-01	4.98E-01	9.14E-01	3.96E-01	2.28E-01	1.96E-01
Lead (Pb)	$\mu g/m^3$	6.69E-03	9.31E-04	-	-	9.31E-04	2.42E-03	1.01E-03	6.69E-03	2.76E-03	1.01E-03	2.82E-03	3.30E-03
Magnesium (Mg)	$\mu g/m^3$	2.69E-01	8.02E-02	-	-	2.20E-01	8.02E-02	1.21E-01	2.69E-01	1.54E-01	1.68E-01	1.24E-01	1.27E-01
Manganese (Mn)	$\mu g/m^3$	2.12E-02	4.67E-03	-	-	1.09E-02	4.67E-03	6.20E-03	2.12E-02	1.13E-02	1.24E-02	6.92E-03	8.61E-03
Molybdenum (Mo)	$\mu g/m^3$	1.01E-03	8.65E-04	-	-	9.31E-04	8.65E-04	1.01E-03	9.84E-04	9.21E-04	1.01E-03	9.61E-04	8.85E-04
Nickel (Ni)	$\mu g/m^3$	1.01E-03	8.65E-04	-	-	9.31E-04	8.65E-04	1.01E-03	9.84E-04	9.21E-04	1.01E-03	9.61E-04	8.85E-04
Phosphorus (P)	$\mu g/m^3$	3.34E-01	7.21E-03	-	-	7.76E-03	7.21E-03	8.42E-03	2.43E-02	3.34E-01	8.40E-03	8.01E-03	7.37E-03
Selenium (Se)	$\mu g/m^3$	3.37E-03	2.88E-03	-	-	3.10E-03	2.88E-03	3.37E-03	3.28E-03	3.07E-03	3.36E-03	3.20E-03	2.95E-03
Silver (Ag)	$\mu g/m^3$	1.68E-03	1.44E-03	-	-	1.55E-03	1.44E-03	1.68E-03	1.64E-03	1.53E-03	1.68E-03	1.60E-03	1.47E-03
Strontium (Sr)	$\mu g/m^3$	1.28E-02	1.85E-03	-	-	1.28E-02	1.85E-03	3.37E-03	7.15E-03	5.71E-03	4.64E-03	3.85E-03	2.95E-03
Thallium (Tl)	$\mu g/m^3$	3.37E-03	2.88E-03	-	-	3.10E-03	2.88E-03	3.37E-03	3.28E-03	3.07E-03	3.36E-03	3.20E-03	2.95E-03
Tin (Sn)	$\mu g/m^3$	3.37E-03	2.88E-03	-	-	3.10E-03	2.88E-03	3.37E-03	3.28E-03	3.07E-03	3.36E-03	3.20E-03	2.95E-03
Titanium (Ti)	$\mu g/m^3$	1.72E-02	2.88E-03	-	-	3.10E-03	2.88E-03	3.37E-03	7.21E-03	1.72E-02	3.36E-03	3.20E-03	2.95E-03
Vanadium (V)	$\mu g/m^3$	1.68E-03	1.44E-03	-	-	1.55E-03	1.44E-03	1.68E-03	1.64E-03	1.53E-03	1.68E-03	1.60E-03	1.47E-03
Zinc (Zn)	$\mu g/m^3$	7.41E-02	1.32E-02	-	-	2.00E-02	2.82E-02	1.32E-02	7.41E-02	2.14E-02	1.38E-02	1.74E-02	4.35E-02
Zirconium (Zr)	$\mu g/m^3$	1.68E-03	1.44E-03	-	-	1.55E-03	1.44E-03	1.68E-03	1.64E-03	1.53E-03	1.68E-03	1.60E-03	1.47E-03
Total Uranium (U)	$\mu g/m^3$	1.52E-04	1.30E-04	-	-	1.40E-04	1.30E-04	1.52E-04	1.48E-04	1.38E-04	1.51E-04	1.44E-04	1.33E-04

*Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

Note: Feb 6 and Feb 12 sample flows are not within the acceptable flow range of 40 cfm +/- 10% as stipulated in the Operations Manual for Air Quality Monitoring in Ontario for HiVol Sampling.

Appendix G PAHS DATA SUMMARY

Polycyclic Aromatic Hydrocarbons	Courtice WPCP Station	2016									
Location		Courtice		Courtice		Courtice		Courtice		Courtice	
Date	dd/mm/yyyy	6/02/2016		18/02/2016		1/03/2016		13/03/2016		25/03/2016	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.81		24.27		24.5		24.6		24.4	
Technician		TH		TH		TH		TH		TH	
Filter Number		BTN779-01		BTP750-01		BTQ056-01		BX0145-01		BXO306-01	
Maxaam ID		BVK674		BXA237		BYU834		CAH360		CCI909	
Maxxam Job #		B628182		B635960		B644821		B652160		B662572	
Total Volumetric Flow	Am^3/sample	362.42		336.83		341.45		363.86		362.43	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Benzo(a)pyrene	µg	0.0049	0.0014	0.0197	0.020	0.0085	0.030	0.0091	0.0040	0.0020	0.0018
1-Methylnaphthalene	µg	1.07	0.15	1.32	0.10	0.55	0.15	1.47	0.10	1.63	0.15
2-Methylnaphthalene	µg	1.65	0.15	2.08	0.10	0.83	0.15	2.22	0.10	2.99	0.15
Acenaphthene	µg	0.255	0.075	0.160	0.050	0.168	0.075	0.686	0.050	0.867	0.075
Acenaphthylene	µg	<0.075	0.075	0.094	0.050	0.090	0.075	<0.050	0.050	<0.075	0.075
Anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(b)fluoranthene	µg	<0.075	0.075	0.084	0.050	<0.075	0.075	0.062	0.050	<0.075	0.075
Benzo(b)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(e)pyrene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(k)fluoranthene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Biphenyl	µg	0.62	0.15	0.51	0.10	0.34	0.15	0.61	0.10	0.77	0.15
Chrysene	µg	<0.075	0.075	0.070	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenz(a,h)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene	µg	< 0.3 (1)	0.3	< 0.2 (1)	0.2	< 0.3 (1)	0.3	< 0.2 (1)	0.2	<0.15 (2)	0.15
Fluoranthene	µg	0.135	0.075	0.192	0.050	0.138	0.075	0.182	0.050	0.168	0.075
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Naphthalene	µg	7.65	0.11	6.24	0.072	3.79	0.11	6.64	0.072	7.65	0.11
o-Terphenyl	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Perylene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Phenanthrene	µg	0.492	0.075	0.500	0.050	0.501	0.075	0.860	0.050	0.816	0.075
Pyrene	µg	<0.075	0.075	0.178	0.050	0.105	0.075	0.118	0.050	0.102	0.075
Tetralin	µg	0.62	0.15	0.71	0.10	0.30	0.15	0.68	0.10	0.60	0.15

Calculated Concentrations	Quarter 1			Courtice	Courtice	Courtice	Courtice	Courtice
				1	2	3	4	5
	Units	Maximum	Minimum	6/02/2016	18/02/2016	1/03/2016	13/03/2016	25/03/2016
Benzo(a)pyrene	ng/m^3	5.85E-02	5.52E-03	1.35E-02	5.85E-02	2.49E-02	2.50E-02	5.52E-03
1-Methylnaphthalene	ng/m^3	4.50E+00	1.61E+00	2.95E+00	3.92E+00	1.61E+00	4.04E+00	4.50E+00
2-Methylnaphthalene	ng/m^3	8.25E+00	2.43E+00	4.55E+00	6.18E+00	2.43E+00	6.10E+00	8.25E+00
Acenaphthene	ng/m^3	2.39E+00	4.75E-01	7.04E-01	4.75E-01	4.92E-01	1.89E+00	2.39E+00
Acenaphthylene	ng/m^3	2.79E-01	6.87E-02	1.03E-01	2.79E-01	2.64E-01	6.87E-02	1.03E-01
Anthracene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Benzo(a)anthracene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Benzo(a)fluorene	ng/m^3	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01
Benzo(b)fluoranthene	ng/m^3	2.49E-01	1.03E-01	1.03E-01	2.49E-01	1.10E-01	1.70E-01	1.03E-01
Benzo(b)fluorene	ng/m^3	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01
Benzo(e)pyrene	ng/m^3	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01
Benzo(g,h,i)perylene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Benzo(k)fluoranthene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Biphenyl	ng/m^3	2.12E+00	9.96E-01	1.71E+00	1.51E+00	9.96E-01	1.68E+00	2.12E+00
Chrysene	ng/m^3	2.08E-01	6.87E-02	1.03E-01	2.08E-01	1.10E-01	6.87E-02	1.03E-01
Dibenz(a,h)anthracene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	4.39E-01	2.07E-01	4.14E-01	2.97E-01	4.39E-01	2.75E-01	2.07E-01
Fluoranthene	ng/m^3	5.70E-01	3.72E-01	3.72E-01	5.70E-01	4.04E-01	5.00E-01	4.64E-01
Indeno(1,2,3-cd)pyrene	ng/m^3	1.10E-01	6.87E-02	1.03E-01	7.42E-02	1.10E-01	6.87E-02	1.03E-01
Naphthalene	ng/m^3	2.11E+01	1.11E+01	2.11E+01	1.85E+01	1.11E+01	1.82E+01	2.11E+01
o-Terphenyl	ng/m^3	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01
Perylene	ng/m^3	2.20E-01	1.37E-01	2.07E-01	1.48E-01	2.20E-01	1.37E-01	2.07E-01
Phenanthrene	ng/m^3	2.36E+00	1.36E+00	1.36E+00	1.48E+00	1.47E+00	2.36E+00	2.25E+00
Pyrene	ng/m^3	5.28E-01	1.03E-01	1.03E-01	5.28E-01	3.08E-01	3.24E-01	2.81E-01
Tetralin	ng/m^3	2.11E+00	8.79E-01	1.71E+00	2.11E+00	8.79E-01	1.87E+00	1.66E+00
Total PAH	ng/m^3	4.52E+01	2.24E+01	3.70E+01	3.76E+01	2.24E+01	3.87E+01	4.52E+01

Note:
RDL = Reportable Detection Limit
Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan
1. At the time of initial laboratory analysis, Dibenzo(a,c) anthracene + Picene was not included in the lab's calibration standards. Upon Stantec's request, the data was reviewed and no peaks were found at the appropriate retention time. The estimated detection limit for these compounds in listed and used in determination of concentrations.

2. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

Polycyclic Aromatic Hydrocarbons	Rundle Road Station	2016									
Location		Rundle		Rundle		Rundle		Rundle		Rundle	
Date	dd/mm/yyyy	06/02/2016		18/02/2016		01/03/2016		13/03/2016		25/03/2016	
Start Time	hh:mm	0:00		0:00		0:00		0:00		0:00	
Sample Duration	minutes	23.93		23.93		23.75		23.49		23.76	
Technician		TH		TH		TH		TH		TH	
Filter Number		BTN778-01		BTP748-01		BTQ055-01		BX0144-01		BXO307-01	
Maxaam ID		BVK675		BXA237		BYU835		CAH361		CCI910	
Maxxam Job #		B628182		B635960		B644821		B652160		B662572	
Total Volumetric Flow	Am^3/sample	363.78		330.88		346.10		345.46		361.61	
Analytical Results	**Units**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**	**Value**	**RDL**
Benzo(a)pyrene	µg	0.0126	0.0019	0.0686	0.020	<0.014	0.014	0.0071	0.0064	0.0048	0.0028
1-Methylnaphthalene	µg	1.12	0.15	2.09	0.10	0.46	0.15	0.69	0.10	0.76	0.15
2-Methylnaphthalene	µg	1.77	0.15	3.32	0.10	0.67	0.15	1.13	0.10	1.24	0.15
Acenaphthene	µg	0.267	0.075	0.254	0.050	0.090	0.075	0.400	0.050	0.216	0.075
Acenaphthylene	µg	<0.075	0.075	0.278	0.050	0.087	0.075	<0.050	0.050	<0.075	0.075
Anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)anthracene	µg	<0.075	0.075	0.076	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(a)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(b)fluoranthene	µg	<0.075	0.075	0.162	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(b)fluorene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(e)pyrene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Benzo(g,h,i)perylene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Benzo(k)fluoranthene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Biphenyl	µg	0.59	0.15	0.74	0.10	0.30	0.15	0.37	0.10	0.39	0.15
Chrysene	µg	<0.075	0.075	0.134	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenz(a,h)anthracene	µg	<0.075	0.075	<0.050	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Dibenzo(a,c) anthracene + Picene	µg	< 0.3 (1)	0.3	< 0.2 (1)	0.2	< 0.3 (1)	0.3	< 0.2 (1)	0.2	<0.15	0.15
Fluoranthene	µg	0.150	0.075	0.368	0.050	0.141	0.075	0.136	0.050	0.114	0.075
Indeno(1,2,3-cd)pyrene	µg	<0.075	0.075	0.060	0.050	<0.075	0.075	<0.050	0.050	<0.075	0.075
Naphthalene	µg	7.51	0.11	11.6	0.072	3.42	0.11	3.79	0.072	4.94	0.11
o-Terphenyl	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Perylene	µg	<0.15	0.15	<0.10	0.10	<0.15	0.15	<0.10	0.10	<0.15	0.15
Phenanthrene	µg	0.459	0.075	0.870	0.050	0.405	0.075	0.572	0.050	0.468	0.075
Pyrene	µg	0.078	0.075	0.338	0.050	0.102	0.075	0.076	0.050	<0.075	0.075
Tetralin	µg	0.67	0.15	0.96	0.10	0.22	0.15	0.30	0.10	0.38	0.15

Calculated Concentrations	Quarter 1			Rundle 1	Rundle 2	Rundle 3	Rundle 4	Rundle 5
	Units	Maximum	Minimum	2/6/2016	2/18/2016	3/1/2016	3/13/2016	25/03/2016
Benzo(a)pyrene	ng/m^3	2.07E-01	1.33E-02	3.46E-02	2.07E-01	2.02E-02	2.06E-02	1.33E-02
1-Methylnaphthalene	ng/m^3	6.32E+00	1.33E+00	3.08E+00	6.32E+00	1.33E+00	2.00E+00	2.10E+00
2-Methylnaphthalene	ng/m^3	1.00E+01	1.94E+00	4.87E+00	1.00E+01	1.94E+00	3.27E+00	3.43E+00
Acenaphthene	ng/m^3	1.16E+00	2.60E-01	7.34E-01	7.68E-01	2.60E-01	1.16E+00	5.97E-01
Acenaphthylene	ng/m^3	8.40E-01	7.24E-02	1.03E-01	8.40E-01	2.51E-01	7.24E-02	1.04E-01
Anthracene	ng/m^3	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02	1.04E-01
Benzo(a)anthracene	ng/m^3	2.30E-01	7.24E-02	1.03E-01	2.30E-01	1.08E-01	7.24E-02	1.04E-01
Benzo(a)fluorene	ng/m^3	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01	2.07E-01
Benzo(b)fluoranthene	ng/m^3	4.90E-01	7.24E-02	1.03E-01	4.90E-01	1.08E-01	7.24E-02	1.04E-01
Benzo(b)fluorene	ng/m^3	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01	2.07E-01
Benzo(e)pyrene	ng/m^3	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01	2.07E-01
Benzo(g,h,i)perylene	ng/m^3	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02	1.04E-01
Benzo(k)fluoranthene	ng/m^3	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02	1.04E-01
Biphenyl	ng/m^3	2.24E+00	8.67E-01	1.62E+00	2.24E+00	8.67E-01	1.07E+00	1.08E+00
Chrysene	ng/m^3	4.05E-01	7.24E-02	1.03E-01	4.05E-01	1.08E-01	7.24E-02	1.04E-01
Dibenz(a,h)anthracene	ng/m^3	1.08E-01	7.24E-02	1.03E-01	7.56E-02	1.08E-01	7.24E-02	1.04E-01
Dibenzo(a,c) anthracene + Picene	ng/m^3	4.33E-01	2.07E-01	4.12E-01	3.02E-01	4.33E-01	2.89E-01	2.07E-01
Fluoranthene	ng/m^3	1.11E+00	3.15E-01	4.12E-01	1.11E+00	4.07E-01	3.94E-01	3.15E-01
Indeno(1,2,3-cd)pyrene	ng/m^3	1.81E-01	7.24E-02	1.03E-01	1.81E-01	1.08E-01	7.24E-02	1.04E-01
Naphthalene	ng/m^3	3.51E+01	9.88E+00	2.06E+01	3.51E+01	9.88E+00	1.10E+01	1.37E+01
o-Terphenyl	ng/m^3	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01	2.07E-01
Perylene	ng/m^3	2.17E-01	1.45E-01	2.06E-01	1.51E-01	2.17E-01	1.45E-01	2.07E-01
Phenanthrene	ng/m^3	2.63E+00	1.17E+00	1.26E+00	2.63E+00	1.17E+00	1.66E+00	1.29E+00
Pyrene	ng/m^3	1.02E+00	1.04E-01	2.14E-01	1.02E+00	2.95E-01	2.20E-01	1.04E-01
Tetralin	ng/m^3	2.90E+00	6.36E-01	1.84E+00	2.90E+00	6.36E-01	8.68E-01	1.05E+00
Total PAH	ng/m^3	6.58E+01	1.94E+01	3.71E+01	6.58E+01	1.94E+01	2.33E+01	2.58E+01

Note:
RDL = Reportable Detection Limit
Non-continuous monitoring resumed February 2016 as per Ambient Air Monitoring Plan

1. At the time of initial laboratory analysis, Dibenzo(a,c) anthracene + Picene was not included in the lab's calibration standards. Upon Stantec's request, the data was reviewed and no peaks were found at the appropriate retention time. The estimated detection limit for these compounds in listed and used in determination of concentrations.

2. These parameters have not been subjected to Maxxam's standard validation process nor has it been accredited for the submitted matrix.

Appendix H DIOXINS AND FURANS DATA SUMMARY

Dioxins and Furans	Courtice WPCP Station	2016								
Location		Courtice			Courtice			Courtice		
Date	dd/mm/yyyy	1/01/2016			13/1/2016			25/01/2016		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.47			22.63			23.5		
Technician		TH			TH			TH		
Filter Number		BNV291-01			BPV118-01			BRH435-01		
Maxaam ID					BRA130			BSX746		
Maxxam Job #					B609043			B618197		
Total Volumetric Flow	Am^3/sample	359.87			317.22			383.27		
Analytical Results	Units	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF
2,3,7,8-Tetra CDD *	pg	<2.0	2.0	1	<2.1	2.1	1	<2.0	2.0	1
1,2,3,7,8-Penta CDD *	pg	<2.6	2.6	1	<2.1	2.1	1	2.8	2.1	1
1,2,3,4,7,8-Hexa CDD *	pg	<1.8	1.8	0.1	<2.0	2.0	0.1	4.3	2.3	0.1
1,2,3,6,7,8-Hexa CDD *	pg	2.8	1.9	0.1	<2.1	2.1	0.1	9.4	2.5	0.1
1,2,3,7,8,9-Hexa CDD *	pg	4.7	1.6	0.1	2.4	1.9	0.1	11.6 (4)	2.1	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	35.3	1.5	0.01	13.7	1.9	0.01	80.1	2.4	0.01
Octa CDD *	pg	112	1.5	0.0003	63.3	2.2	0.0003	200	1.9	0.0003
Total Tetra CDD *	pg	<5.0 (2)	5.0		<3.1 (2)	3.1		19.9	2.0	
Total Penta CDD *	pg	<3.2 (2)	3.2		<3.1 (2)	3.1		34.7	2.1	
Total Hexa CDD *	pg	24.0	1.7		11.8	2.0		83.8	2.3	
Total Hepta CDD *	pg	73.8	1.5		53.6	1.9		174	2.4	
2,3,7,8-Tetra CDF **	pg	<1.9	1.9	0.1	<2.5 (1)	2.5	0.1	<23	23	0.1
1,2,3,7,8-Penta CDF **	pg	<1.7	1.7	0.03	<2.1	2.1	0.03	4.2	2.1	0.03
2,3,4,7,8-Penta CDF **	pg	<1.7	1.7	0.3	<2.1	2.1	0.3	7.8	2.2	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<2.1	2.1	0.1	<1.9	1.9	0.1	26.5 (4)	2.0	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<2.0	2.0	0.1	<1.8	1.8	0.1	9.0	1.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<2.1	2.1	0.1	<1.9	1.9	0.1	14.2	2.1	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<2.3	2.3	0.1	<2.1	2.1	0.1	2.7	2.2	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	3.6	1.7	0.01	2.2	1.7	0.01	63.7	1.8	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.0	2.0	0.01	<2.1	2.1	0.01	9.7	2.3	0.01
Octa CDF **	pg	3.7	2.1	0.0003	6.1	2.0	0.0003	69.7	2.3	0.0003
Total Tetra CDF **	pg	<1.9	1.9		2.6	2.2		117	1.9	
Total Penta CDF **	pg	<1.7	1.7		<2.1	2.1		96.2	2.1	
Total Hexa CDF **	pg	<2.1	2.1		<1.9	1.9		117	2.1	
Total Hepta CDF **	pg	5.6	1.8		5.1	1.9		109	2.0	
Toxic Equivalency	pg									

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(3) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds
(4) EMPC / Merged Peak
January samples are additional D/Fsampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1			Courtice	Courtice	Courtice
				A1 [a]	A2 [a]	A3 [a]
	Units	Maximum	Minimum	1/01/2016	13/1/2016	25/01/2016
2,3,7,8-Tetra CDD *	pg/m^3	5.27E-03	2.61E-03	0.003	0.003	0.003
1,2,3,7,8-Penta CDD *	pg/m^3	7.31E-03	3.31E-03	0.004	0.003	0.007
1,2,3,4,7,8-Hexa CDD *	pg/m^3	1.12E-02	2.50E-03	0.003	0.003	0.011
1,2,3,6,7,8-Hexa CDD *	pg/m^3	2.45E-02	3.31E-03	0.008	0.003	0.025
1,2,3,7,8,9-Hexa CDD *	pg/m^3	3.03E-02	4.39E-03	0.013	0.008	0.030
1,2,3,4,6,7,8-Hepta CDD *	pg/m^3	2.09E-01	2.40E-02	0.098	0.043	0.209
Octa CDD *	pg/m^3	5.22E-01	1.64E-01	0.311	0.200	0.522
Total Tetra CDD *	pg/m^3	5.19E-02	3.04E-03	0.007	0.005	0.052
Total Penta CDD *	pg/m^3	9.05E-02	4.45E-03	0.004	0.005	0.091
Total Hexa CDD *	pg/m^3	2.19E-01	2.05E-02	0.067	0.037	0.219
Total Hepta CDD *	pg/m^3	4.54E-01	1.22E-01	0.205	0.169	0.454
2,3,7,8-Tetra CDF **	pg/m^3	3.00E-02	2.64E-03	0.003	0.004	0.030
1,2,3,7,8-Penta CDF **	pg/m^3	1.10E-02	2.36E-03	0.002	0.003	0.011
2,3,4,7,8-Penta CDF **	pg/m^3	2.04E-02	2.36E-03	0.002	0.003	0.020
1,2,3,4,7,8-Hexa CDF **	pg/m^3	6.91E-02	2.92E-03	0.003	0.003	0.069
1,2,3,6,7,8-Hexa CDF **	pg/m^3	2.35E-02	2.78E-03	0.003	0.003	0.023
2,3,4,6,7,8-Hexa CDF **	pg/m^3	3.70E-02	2.92E-03	0.003	0.003	0.037
1,2,3,7,8,9-Hexa CDF **	pg/m^3	7.04E-03	3.20E-03	0.003	0.003	0.007
1,2,3,4,6,7,8-Hepta CDF **	pg/m^3	1.66E-01	3.59E-03	0.010	0.007	0.166
1,2,3,4,7,8,9-Hepta CDF **	pg/m^3	2.53E-02	2.78E-03	0.003	0.003	0.025
Octa CDF **	pg/m^3	1.82E-01	5.93E-03	0.010	0.019	0.182
Total Tetra CDF **	pg/m^3	3.05E-01	2.64E-03	0.003	0.008	0.305
Total Penta CDF **	pg/m^3	2.51E-01	2.36E-03	0.002	0.003	0.251
Total Hexa CDF **	pg/m^3	3.05E-01	2.92E-03	0.003	0.003	0.305
Total Hepta CDF **	pg/m^3	2.84E-01	4.00E-03	0.016	0.016	0.284
Toxic Equivalency	pg/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.044	0.011	0.012	0.011	0.044
Calculated TEQ Concentrations	**Units**			**Courtice**	**Courtice**	**Courtice**
				1/1/2016	**13/1/2016**	**1/25/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.003	0.003	0.003
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.004	0.003	0.007
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0003	0.0003	0.0011
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0008	0.0003	0.0025
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0013	0.0008	0.0030
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0010	0.0004	0.0021
Octa CDD	pg TEQ/m^3			0.00009	0.00006	0.00016
Total Tetra CDD	pg TEQ/m^3					
Total Penta CDD	pg TEQ/m^3					
Total Hexa CDD	pg TEQ/m^3					
Total Hepta CDD	pg TEQ/m^3					
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0003	0.0004	0.0030
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0001	0.0003
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.001	0.006
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0003	0.0069
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0003	0.0023
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0003	0.0003	0.0037
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0003	0.0003	0.0007
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00010	0.00007	0.00166
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00003	0.00003	0.00025
Octa CDF	pg TEQ/m^3			0.000003	0.000006	0.000055
Total Tetra CDF	pg TEQ/m^3					
Total Penta CDF	pg TEQ/m^3					
Total Hexa CDF	pg TEQ/m^3					
Total Hepta CDF	pg TEQ/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.012	0.011	0.044

Notes:
EDL = Estimated Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

Dioxins and Furans	Courtice WPCP Station	2016								
Location		Courtice			Courtice			Courtice		
Date	dd/mm/yyyy	6/02/2016			1/03/2016			25/03/2016		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.81			24.5			24.4		
Technician		TH			TH			TH		
Filter Number		BTN779-01			BTQ056-01			BXO306-01		
Maxaam ID		BVK674			BYU834			CCI909		
Maxxam Job #		B628182			B644821			B662572		
Total Volumetric Flow	Am^3/sample	362.42			341.45			362.43		
Analytical Results	Units	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF
2,3,7,8-Tetra CDD *	pg	<2.8	2.8	1	<3.6	3.6	1	<2.2	2.2	1
1,2,3,7,8-Penta CDD *	pg	<2.9	2.9	1	<3.1	3.1	1	<3.3	3.3	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.6	3.6	0.1	<3.2	3.2	0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDD *	pg	<3.9	3.9	0.1	<3.5	3.5	0.1	<3.4	3.4	0.1
1,2,3,7,8,9-Hexa CDD *	pg	4.5	3.4	0.1	<3.0	3.0	0.1	<3.3 (1)	3.3	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	29.9	3.6	0.01	8.2	3.5	0.01	47.5	2.9	0.01
Octa CDD *	pg	107	2.4	0.0003	56.1	3.6	0.0003	105	3.2	0.0003
Total Tetra CDD *	pg	9.0	2.8		<4.6 (1)	4.6		<2.2	2.2	
Total Penta CDD *	pg	6.1	2.9		<3.1	3.1		<3.3	3.3	
Total Hexa CDD *	pg	26.4	3.6		<14 (1)	14		16.4	3.2	
Total Hepta CDD *	pg	68.6	3.6		41.7	3.5		90.1	2.9	
2,3,7,8-Tetra CDF **	pg	<6.3 (1)	6.3	0.1	<3.6	3.6	0.1	<2.7	2.7	0.1
1,2,3,7,8-Penta CDF **	pg	<3.5	3.5	0.03	<4.3	4.3	0.03	<2.7	2.7	0.03
2,3,4,7,8-Penta CDF **	pg	<3.5	3.5	0.3	<4.3	4.3	0.3	<2.7	2.7	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<3.3	3.3	0.1	<3.2	3.2	0.1	<3.0	3.0	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<3.2	3.2	0.1	<3.1	3.1	0.1	<2.9	2.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<3.4	3.4	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<3.6	3.6	0.1	<3.6	3.6	0.1	<3.4	3.4	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	5.3	2.7	0.01	<3.1	3.1	0.01	<2.6	2.6	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<3.3	3.3	0.01	<3.9	3.9	0.01	<3.2	3.2	0.01
Octa CDF **	pg	<4.3 (2)	4.3	0.0003	7.8	3.5	0.0003	3.9	2.9	0.0003
Total Tetra CDF **	pg	15.3	3.9		<3.6	3.6		<2.7	2.7	
Total Penta CDF **	pg	<3.5	3.5		<4.3	4.3		<2.7	2.7	
Total Hexa CDF **	pg	4.6	3.4		<3.3	3.3		<3.1	3.1	
Total Hepta CDF **	pg	5.3	2.9		<3.5	3.5		<2.9	2.9	
Toxic Equivalency	pg									

(1) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from in
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated de
(3) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds
(4) EMPC / Merged Peak
January samples are additional D/Fsampling outside the scope of the Ambient Air Monitoring Pla
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-conti
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Units	Quarter 1 Maximum	Quarter 1 Minimum	Courtice 1 6/02/2016	Courtice 2 1/03/2016	Courtice 3 25/03/2016
2,3,7,8-Tetra CDD *	pg/m^3	5.27E-03	2.61E-03	0.004	0.005	0.003
1,2,3,7,8-Penta CDD *	pg/m^3	7.31E-03	3.31E-03	0.004	0.005	0.005
1,2,3,4,7,8-Hexa CDD *	pg/m^3	1.12E-02	2.50E-03	0.005	0.005	0.004
1,2,3,6,7,8-Hexa CDD *	pg/m^3	2.45E-02	3.31E-03	0.005	0.005	0.005
1,2,3,7,8,9-Hexa CDD *	pg/m^3	3.03E-02	4.39E-03	0.012	0.004	0.005
1,2,3,4,6,7,8-Hepta CDD *	pg/m^3	2.09E-01	2.40E-02	0.083	0.024	0.131
Octa CDD *	pg/m^3	5.22E-01	1.64E-01	0.295	0.164	0.290
Total Tetra CDD *	pg/m^3	5.19E-02	3.04E-03	0.025	0.007	0.003
Total Penta CDD *	pg/m^3	9.05E-02	4.45E-03	0.017	0.005	0.005
Total Hexa CDD *	pg/m^3	2.19E-01	2.05E-02	0.073	0.021	0.045
Total Hepta CDD *	pg/m^3	4.54E-01	1.22E-01	0.189	0.122	0.249
2,3,7,8-Tetra CDF **	pg/m^3	3.00E-02	2.64E-03	0.009	0.005	0.004
1,2,3,7,8-Penta CDF **	pg/m^3	1.10E-02	2.36E-03	0.005	0.006	0.004
2,3,4,7,8-Penta CDF **	pg/m^3	2.04E-02	2.36E-03	0.005	0.006	0.004
1,2,3,4,7,8-Hexa CDF **	pg/m^3	6.91E-02	2.92E-03	0.005	0.005	0.004
1,2,3,6,7,8-Hexa CDF **	pg/m^3	2.35E-02	2.78E-03	0.004	0.005	0.004
2,3,4,6,7,8-Hexa CDF **	pg/m^3	3.70E-02	2.92E-03	0.005	0.005	0.004
1,2,3,7,8,9-Hexa CDF **	pg/m^3	7.04E-03	3.20E-03	0.005	0.005	0.005
1,2,3,4,6,7,8-Hepta CDF **	pg/m^3	1.66E-01	3.59E-03	0.015	0.005	0.004
1,2,3,4,7,8,9-Hepta CDF **	pg/m^3	2.53E-02	2.78E-03	0.005	0.006	0.004
Octa CDF **	pg/m^3	1.82E-01	5.93E-03	0.006	0.023	0.011
Total Tetra CDF **	pg/m^3	3.05E-01	2.64E-03	0.042	0.005	0.004
Total Penta CDF **	pg/m^3	2.51E-01	2.36E-03	0.005	0.006	0.004
Total Hexa CDF **	pg/m^3	3.05E-01	2.92E-03	0.013	0.005	0.004
Total Hepta CDF **	pg/m^3	2.84E-01	4.00E-03	0.015	0.005	0.004
Toxic Equivalency	pg/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.044	0.011	0.016	0.016	0.014
Calculated TEQ Concentrations	**Units**			**Courtice 2/6/2016**	**Courtice 01/03/2016**	**Courtice 25/03/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.004	0.005	0.003
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.004	0.005	0.005
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	0.0004
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0005	0.0005	0.0005
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0012	0.0004	0.0005
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0008	0.0002	0.0013
Octa CDD	pg TEQ/m^3			0.00009	0.00005	0.00009
Total Tetra CDD	pg TEQ/m^3					
Total Penta CDD	pg TEQ/m^3					
Total Hexa CDD	pg TEQ/m^3					
Total Hepta CDD	pg TEQ/m^3					
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0009	0.0005	0.0004
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0002	0.0001
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.002	0.001
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0005	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0005	0.0004
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0005	0.0005	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00015	0.00005	0.00004
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00005	0.00006	0.00004
Octa CDF	pg TEQ/m^3			0.000002	0.000007	0.000003
Total Tetra CDF	pg TEQ/m^3					
Total Penta CDF	pg TEQ/m^3					
Total Hexa CDF	pg TEQ/m^3					
Total Hepta CDF	pg TEQ/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.016	0.016	0.014

Notes:
EDL = Estimated Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Fac
a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-conti

Dioxins and Furans	Rundle Road Station	2016								
Location		Rundle			Rundle			Rundle		
Date	dd/mm/yyyy	1/01/2016			13/01/2016			25/01/2016		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.68			23.51			23.63		
Technician		TH			TH			TH		
Filter Number		BNV290-01			BPV117-01			BRH436-01		
Maxaam ID					BRA131			BSX747		
Maxxam Job #					B609043			B618197		
Total Volumetric Flow	Am^3/sample	361.20			315.16			361.37		
Analytical Results	Units	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF
2,3,7,8-Tetra CDD *	pg	<1.9	1.9	1	<2.0	2.0	1	<2.1	2.1	1
1,2,3,7,8-Penta CDD *	pg	<1.8	1.8	1	<2.0	2.0	1	2.4	2.2	1
1,2,3,4,7,8-Hexa CDD *	pg	<2.1	2.1	0.1	<2.0	2.0	0.1	3.2	2.2	0.1
1,2,3,6,7,8-Hexa CDD *	pg	2.7	2.3	0.1	<2.2	2.2	0.1	5.3	2.4	0.1
1,2,3,7,8,9-Hexa CDD *	pg	5.3	2.0	0.1	<1.9	1.9	0.1	8.0 (3)	2.1	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	41.9	1.6	0.01	17.0	2.1	0.01	64.8	2.0	0.01
Octa CDD *	pg	172	2.3	0.0003	78.8	2.9	0.0003	169	2.1	0.0003
Total Tetra CDD *	pg	<4.0 (1)	4.0		<3.3 (1)	3.3		5.7	2.1	
Total Penta CDD *	pg	2.4	1.8		<3.7 (1)	3.7		10.1	2.2	
Total Hexa CDD *	pg	27.5	2.1		7.6	2.0		49.6	2.2	
Total Hepta CDD *	pg	85.9	1.6		17.0	2.1		145	2.0	
2,3,7,8-Tetra CDF **	pg	2.9	2.4	0.1	2.3	1.9	0.1	7.6	2.1	0.1
1,2,3,7,8-Penta CDF **	pg	<2.1	2.1	0.03	<2.0	2.0	0.03	2.3	2.2	0.03
2,3,4,7,8-Penta CDF **	pg	<2.1	2.1	0.3	<2.0	2.0	0.3	3.0	2.2	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<1.8	1.8	0.1	<2.1	2.1	0.1	7.6 (3)	2.0	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<1.7	1.7	0.1	<2.0	2.0	0.1	3.1	1.9	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<1.8	1.8	0.1	<2.1	2.1	0.1	4.1	2.1	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<1.9	1.9	0.1	<2.3	2.3	0.1	<2.2	2.2	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	4.3	1.6	0.01	3.8	1.9	0.01	15.4	1.9	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<2.0	2.0	0.01	<2.4	2.4	0.01	2.6	2.3	0.01
Octa CDF **	pg	6.0	1.9	0.0003	<3.3	3.3	0.0003	17.9	2.1	0.0003
Total Tetra CDF **	pg	2.9	2.4		2.3	1.9		33.1	2.1	
Total Penta CDF **	pg	<2.1	2.1		<2.0	2.0		26.3	2.2	
Total Hexa CDF **	pg	2.9	1.8		<2.1	2.1		26.9	2.0	
Total Hepta CDF **	pg	7.1	1.8		3.8	2.1		27.6	2.1	
Toxic Equivalency	pg									

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.
(3) EMPC / Merged Peak
(4) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds
January samples are additional D/Fsampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1			Rundle	Rundle	Rundle
				A1 [a]	A2 [a]	A3 [a]
	Units	Maximum	Minimum	1/01/2016	13/01/2016	25/01/2016
2,3,7,8-Tetra CDD *	pg/m^3	4.81E-03	2.61E-03	0.003	0.003	0.003
1,2,3,7,8-Penta CDD	pg/m^3	6.64E-03	2.49E-03	0.002	0.003	0.007
1,2,3,4,7,8-Hexa CDD	pg/m^3	8.86E-03	2.91E-03	0.003	0.003	0.009
1,2,3,6,7,8-Hexa CDD	pg/m^3	1.47E-02	3.49E-03	0.007	0.003	0.015
1,2,3,7,8,9-Hexa CDD	pg/m^3	2.21E-02	3.01E-03	0.015	0.003	0.022
1,2,3,4,6,7,8-Hepta CDD	pg/m^3	2.37E-01	1.85E-02	0.116	0.054	0.179
Octa CDD	pg/m^3	4.89E-01	9.22E-02	0.476	0.250	0.468
Total Tetra CDD	pg/m^3	3.71E-02	2.61E-03	0.006	0.005	0.016
Total Penta CDD	pg/m^3	2.79E-02	3.62E-03	0.007	0.006	0.028
Total Hexa CDD	pg/m^3	1.37E-01	1.34E-02	0.076	0.024	0.137
Total Hepta CDD	pg/m^3	4.40E-01	4.97E-02	0.238	0.054	0.401
2,3,7,8-Tetra CDF **	pg/m^3	2.10E-02	4.48E-03	0.008	0.007	0.021
1,2,3,7,8-Penta CDF	pg/m^3	6.36E-03	2.91E-03	0.003	0.003	0.006
2,3,4,7,8-Penta CDF	pg/m^3	8.30E-03	2.91E-03	0.003	0.003	0.008
1,2,3,4,7,8-Hexa CDF	pg/m^3	2.10E-02	2.49E-03	0.002	0.003	0.021
1,2,3,6,7,8-Hexa CDF	pg/m^3	8.58E-03	2.35E-03	0.002	0.003	0.009
2,3,4,6,7,8-Hexa CDF	pg/m^3	1.13E-02	2.49E-03	0.002	0.003	0.011
1,2,3,7,8,9-Hexa CDF	pg/m^3	4.91E-03	2.63E-03	0.003	0.004	0.003
1,2,3,4,6,7,8-Hepta CDF	pg/m^3	4.26E-02	3.76E-03	0.012	0.012	0.043
1,2,3,4,7,8,9-Hepta CDF	pg/m^3	7.19E-03	2.77E-03	0.003	0.004	0.007
Octa CDF	pg/m^3	4.95E-02	4.62E-03	0.017	0.005	0.050
Total Tetra CDF	pg/m^3	9.16E-02	4.48E-03	0.008	0.007	0.092
Total Penta CDF	pg/m^3	7.28E-02	2.91E-03	0.003	0.003	0.073
Total Hexa CDF	pg/m^3	7.44E-02	3.33E-03	0.008	0.003	0.074
Total Hepta CDF	pg/m^3	7.64E-02	4.05E-03	0.020	0.012	0.076
Toxic Equivalency	pg/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.026	0.011	0.012	0.011	0.026
Calculated TEQ Concentrations	**Units**			**Rundle**	**Rundle**	**Rundle**
				01/01/2016	**13/01/2016**	**25/01/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.003	0.003	0.003
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.002	0.003	0.007
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0003	0.0003	0.0009
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0007	0.0003	0.0015
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0015	0.0003	0.0022
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0012	0.0005	0.0018
Octa CDD	pg TEQ/m^3			0.00014	0.00008	0.00014
Total Tetra CDD	pg TEQ/m^3					
Total Penta CDD	pg TEQ/m^3					
Total Hexa CDD	pg TEQ/m^3					
Total Hepta CDD	pg TEQ/m^3					
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0008	0.0007	0.0021
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0001	0.0002
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.001	0.002
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0002	0.0003	0.0021
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0002	0.0003	0.0009
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0002	0.0003	0.0011
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0003	0.0004	0.0003
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00012	0.00012	0.00043
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00003	0.00004	0.00007
Octa CDF	pg TEQ/m^3			0.000005	0.000002	0.000015
Total Tetra CDF	pg TEQ/m^3					
Total Penta CDF	pg TEQ/m^3					
Total Hexa CDF	pg TEQ/m^3					
Total Hepta CDF	pg TEQ/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.012	0.011	0.026

Notes:
RDL = Reportable Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air Monitoring Plan, and conducted on a 12-day schedule.
The EFW facility became fully operational starting February 1, 2016, and monitoring of non-continuous monitors resumed as specified in the Ambient Monitoring Plan.

Dioxins and Furans	Rundle Road Station	2016								
Location		Rundle			Rundle			Rundle		
Date	dd/mm/yyyy	6/02/2016			1/03/2016			25/03/2016		
Start Time	hh:mm	0:00			0:00			0:00		
Sample Duration	minutes	23.93			23.75			23.76		
Technician		TH			TH			TH		
Filter Number		BTN778-01			BTQ055-01			BXO307-01		
Maxaam ID		BVK674			BYU835			CCI910		
Maxxam Job #		B628182			B644821			B662572		
Total Volumetric Flow	Am^3/sample	363.78			346.10			345.46		
Analytical Results	Units	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF	Value	EDL	WHO_{2005} TEF
2,3,7,8-Tetra CDD *	pg	<3.5	3.5	1	<3.2	3.2	1	<1.8	1.8	1
1,2,3,7,8-Penta CDD *	pg	<3.4	3.4	1	<3.5	3.5	1	<2.5	2.5	1
1,2,3,4,7,8-Hexa CDD *	pg	<3.0	3.0	0.1	<3.4	3.4	0.1	<3.1	3.1	0.1
1,2,3,6,7,8-Hexa CDD *	pg	3.4	3.2	0.1	<3.7	3.7	0.1	<4.3 (1)	4.3	0.1
1,2,3,7,8,9-Hexa CDD *	pg	<5.1 (4)	5.1	0.1	<3.2	3.2	0.1	7.0	2.9	0.1
1,2,3,4,6,7,8-Hepta CDD *	pg	34.0	3.8	0.01	6.4	3.4	0.01	82.0	2.8	0.01
Octa CDD *	pg	112	4.1	0.0003	31.9	3.9	0.0003	169	3.1	0.0003
Total Tetra CDD *	pg	13.5	3.5		<4.6 (1)	4.6		<1.8	1.8	
Total Penta CDD *	pg	6.7	3.4		<3.5	3.5		<2.5	2.5	
Total Hexa CDD *	pg	16.6	3.0		<9.3 (1)	9.3		29.6	3.2	
Total Hepta CDD *	pg	77.2	3.8		17.2	3.4		152	2.8	
2,3,7,8-Tetra CDF **	pg	<7.6 (1)	7.6	0.1	<3.1	3.1	0.1	<3.1	3.1	0.1
1,2,3,7,8-Penta CDF **	pg	<3.5	3.5	0.03	<2.8	2.8	0.03	<3.0	3.0	0.03
2,3,4,7,8-Penta CDF **	pg	<3.5	3.5	0.3	<2.8	2.8	0.3	<3.0	3.0	0.3
1,2,3,4,7,8-Hexa CDF **	pg	<3.7 (1)	3.7	0.1	<3.0	3.0	0.1	<2.9	2.9	0.1
1,2,3,6,7,8-Hexa CDF **	pg	<2.9	2.9	0.1	<2.9	2.9	0.1	<2.8	2.8	0.1
2,3,4,6,7,8-Hexa CDF **	pg	<3.1	3.1	0.1	<3.2	3.2	0.1	<3.0	3.0	0.1
1,2,3,7,8,9-Hexa CDF **	pg	<3.4	3.4	0.1	<3.4	3.4	0.1	<3.2	3.2	0.1
1,2,3,4,6,7,8-Hepta CDF **	pg	7.2	2.9	0.01	<2.6	2.6	0.01	3.9	2.7	0.01
1,2,3,4,7,8,9-Hepta CDF **	pg	<3.6	3.6	0.01	<3.2	3.2	0.01	<3.4	3.4	0.01
Octa CDF **	pg	5.7	3.4	0.0003	<3.2	3.2	0.0003	4.4	3.3	0.0003
Total Tetra CDF **	pg	17.4	3.1		<3.1	3.1		<3.1	3.1	
Total Penta CDF **	pg	5.5	3.5		<2.8	2.8		<3.0	3.0	
Total Hexa CDF **	pg	5.5	3.1		<3.1	3.1		<3.0	3.0	
Total Hepta CDF **	pg	7.2	3.2		<2.8	2.8		7.9	3.0	
Toxic Equivalency	pg									

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an ele
(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention tir
(3) EMPC / Merged Peak
(4) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 secon
January samples are additional D/Fsampling outside the scope of the Ambient Air Mo
The EFW facility became fully operational starting February 1, 2016, and monitoring of
* CDD = Chloro Dibenzo-p-Dioxin ** CDF = Chloro Dibenzo-p-Furan

Calculated Concentrations	Quarter 1			Rundle	Rundle	Rundle
				1	2	3
	Units	Maximum	Minimum	6/02/2016	1/03/2016	25/03/2016
2,3,7,8-Tetra CDD *	pg/m^3	4.81E-03	2.61E-03	0.005	0.005	0.003
1,2,3,7,8-Penta CDD	pg/m^3	6.64E-03	2.49E-03	0.005	0.005	0.004
1,2,3,4,7,8-Hexa CDD	pg/m^3	8.86E-03	2.91E-03	0.004	0.005	0.004
1,2,3,6,7,8-Hexa CDD	pg/m^3	1.47E-02	3.49E-03	0.009	0.005	0.006
1,2,3,7,8,9-Hexa CDD	pg/m^3	2.21E-02	3.01E-03	0.007	0.005	0.020
1,2,3,4,6,7,8-Hepta CDD	pg/m^3	2.37E-01	1.85E-02	0.093	0.018	0.237
Octa CDD	pg/m^3	4.89E-01	9.22E-02	0.308	0.092	0.489
Total Tetra CDD	pg/m^3	3.71E-02	2.61E-03	0.037	0.007	0.003
Total Penta CDD	pg/m^3	2.79E-02	3.62E-03	0.018	0.005	0.004
Total Hexa CDD	pg/m^3	1.37E-01	1.34E-02	0.046	0.013	0.086
Total Hepta CDD	pg/m^3	4.40E-01	4.97E-02	0.212	0.050	0.440
2,3,7,8-Tetra CDF **	pg/m^3	2.10E-02	4.48E-03	0.010	0.004	0.004
1,2,3,7,8-Penta CDF	pg/m^3	6.36E-03	2.91E-03	0.005	0.004	0.004
2,3,4,7,8-Penta CDF	pg/m^3	8.30E-03	2.91E-03	0.005	0.004	0.004
1,2,3,4,7,8-Hexa CDF	pg/m^3	2.10E-02	2.49E-03	0.005	0.004	0.004
1,2,3,6,7,8-Hexa CDF	pg/m^3	8.58E-03	2.35E-03	0.004	0.004	0.004
2,3,4,6,7,8-Hexa CDF	pg/m^3	1.13E-02	2.49E-03	0.004	0.005	0.004
1,2,3,7,8,9-Hexa CDF	pg/m^3	4.91E-03	2.63E-03	0.005	0.005	0.005
1,2,3,4,6,7,8-Hepta CDF	pg/m^3	4.26E-02	3.76E-03	0.020	0.004	0.011
1,2,3,4,7,8,9-Hepta CDF	pg/m^3	7.19E-03	2.77E-03	0.005	0.005	0.005
Octa CDF	pg/m^3	4.95E-02	4.62E-03	0.016	0.005	0.013
Total Tetra CDF	pg/m^3	9.16E-02	4.48E-03	0.048	0.004	0.004
Total Penta CDF	pg/m^3	7.28E-02	2.91E-03	0.015	0.004	0.004
Total Hexa CDF	pg/m^3	7.44E-02	3.33E-03	0.015	0.004	0.004
Total Hepta CDF	pg/m^3	7.64E-02	4.05E-03	0.020	0.004	0.023
Toxic Equivalency	pg/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3	0.026	0.011	0.017	0.015	0.016
Calculated TEQ Concentrations	**Units**			**Rundle**	**Rundle**	**Rundle**
				2/6/2016	**3/1/2016**	**3/25/2016**
2,3,7,8-Tetra CDD *	pg TEQ/m^3			0.005	0.005	0.003
1,2,3,7,8-Penta CDD	pg TEQ/m^3			0.005	0.005	0.004
1,2,3,4,7,8-Hexa CDD	pg TEQ/m^3			0.0004	0.0005	0.0004
1,2,3,6,7,8-Hexa CDD	pg TEQ/m^3			0.0009	0.0005	0.0006
1,2,3,7,8,9-Hexa CDD	pg TEQ/m^3			0.0007	0.0005	0.0020
1,2,3,4,6,7,8-Hepta CDD	pg TEQ/m^3			0.0009	0.0002	0.0024
Octa CDD	pg TEQ/m^3			0.00009	0.00003	0.00015
Total Tetra CDD	pg TEQ/m^3					
Total Penta CDD	pg TEQ/m^3					
Total Hexa CDD	pg TEQ/m^3					
Total Hepta CDD	pg TEQ/m^3					
2,3,7,8-Tetra CDF **	pg TEQ/m^3			0.0010	0.0004	0.0004
1,2,3,7,8-Penta CDF	pg TEQ/m^3			0.0001	0.0001	0.0001
2,3,4,7,8-Penta CDF	pg TEQ/m^3			0.001	0.001	0.001
1,2,3,4,7,8-Hexa CDF	pg TEQ/m^3			0.0005	0.0004	0.0004
1,2,3,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0004	0.0004
2,3,4,6,7,8-Hexa CDF	pg TEQ/m^3			0.0004	0.0005	0.0004
1,2,3,7,8,9-Hexa CDF	pg TEQ/m^3			0.0005	0.0005	0.0005
1,2,3,4,6,7,8-Hepta CDF	pg TEQ/m^3			0.00020	0.00004	0.00011
1,2,3,4,7,8,9-Hepta CDF	pg TEQ/m^3			0.00005	0.00005	0.00005
Octa CDF	pg TEQ/m^3			0.000005	0.000001	0.000004
Total Tetra CDF	pg TEQ/m^3					
Total Penta CDF	pg TEQ/m^3					
Total Hexa CDF	pg TEQ/m^3					
Total Hepta CDF	pg TEQ/m^3					
TOTAL TOXIC EQUIVALENCY	pg TEQ/m^3			0.017	0.015	0.016

Notes:
RDL = Reportable Detection Limit
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equiva
a) Samples A1 - A3 are additional D/F sampling outside the scope of the Ambient Air M
The EFW facility became fully operational starting February 1, 2016, and monitoring of